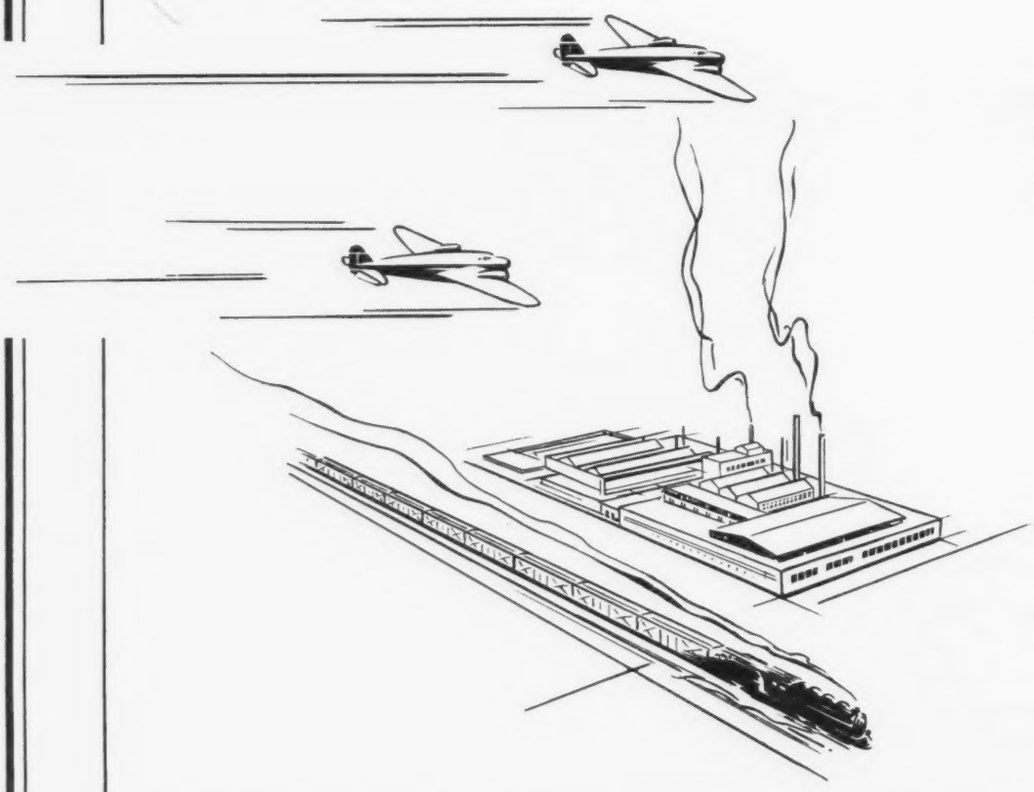
Textile World

NOVEMBER, 1942

keep 'em running

★ ANNUAL MILL CHECK-UP NUMBER ★



Money, too... Must *WORK FASTER* these Days

American Industry is producing at the fastest rate in its history. To maintain the pace, the working capital of every manufacturer must work faster, too. Waiting for funds tied-up in accounts receivable slows down the activities of many companies, just as surely as waiting for materials.

Today it is possible to extend to customers your regular credit terms of 30, 60 or 90 days and yet receive cash as your goods are shipped. This modern and accepted service keeps your working capital liquid, permits you to turn it more often. At the same time, Commercial Factors relieves you of the costly burdens of credit investigation, collections, credit losses and bookkeeping expense.

Put *your* money on a faster work schedule! Write today for complete information about Commercial Factoring and what it can do for *your* business.

CFC

COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc. Established 1828 | Schefer, Schramm & Vogel Established 1838 | Peierls, Buhler & Co., Inc. Established 1893

TWO PARK AVENUE, NEW YORK

SEVENTY-SEVEN FRANKLIN ST., BOSTON

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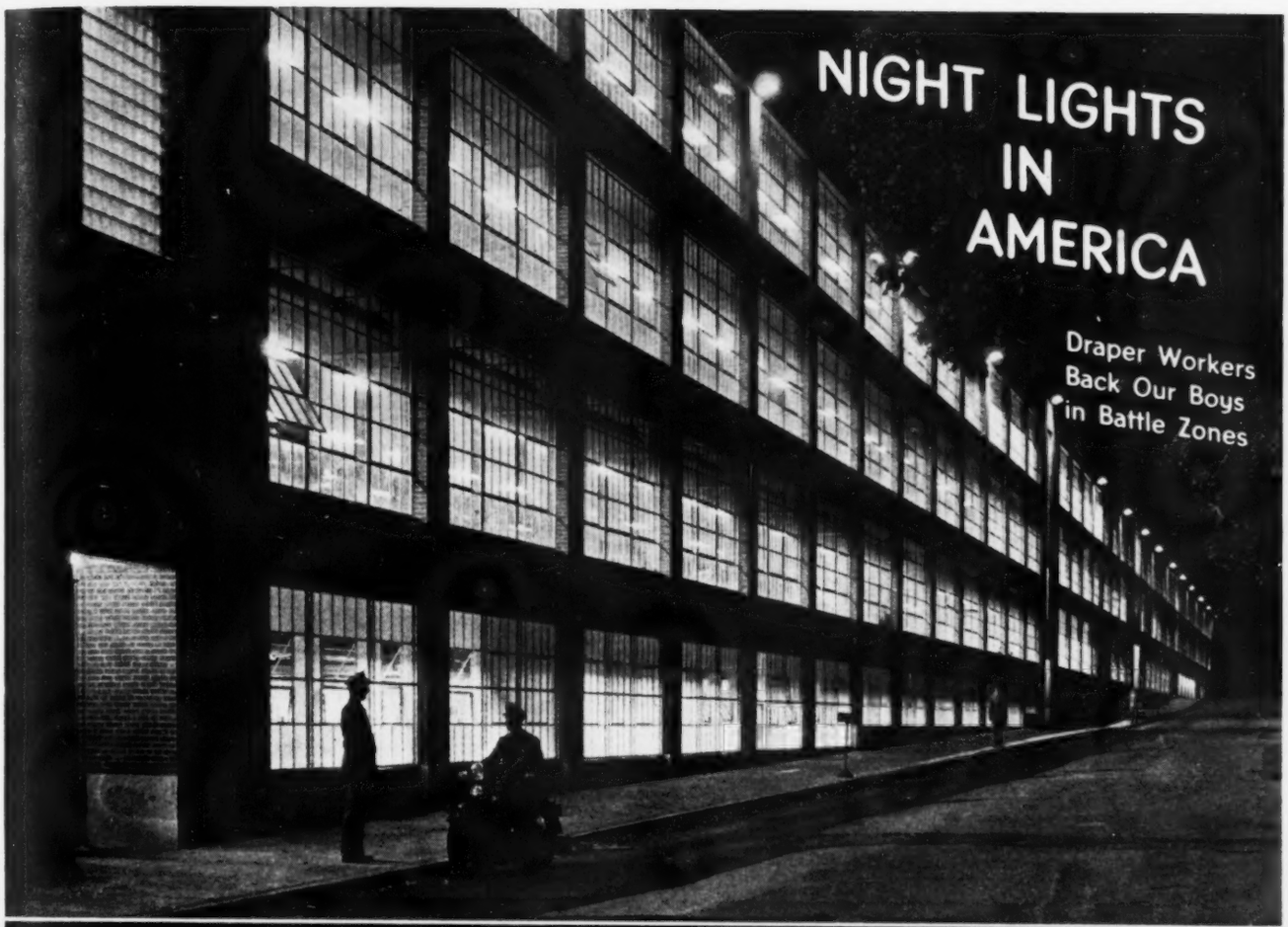
TECHNOLOGY DEPT.



We Are Fighting to Prevent
Reversal of These Pictures

DRAPER CORPORATION

WE ASKED A DOZEN BIG MILL MEN — *and they told us:*

"What we need in Ring Travelers is in Metallurgy . . . to make steel and bronze go farther"

THE NEW-BOW

Prevents yarn ends flying out, provides ample head-room for threading — prevents binding on ring. Note "bend inward" at top of horn.

PERFECT BALANCE

Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.

THE BEVEL EDGE

Great pioneering "U.S." contribution to smooth spinning, twisting.

Eliminating angular edges gives uniformity of tension, more even yarn, less "fly."

Sold under these trade names

- Bowen Round Point Travelers
- Bowen Square Point Travelers
- Bowen Improved Vertical Bronze
- Bowen Patented Bevel Edge
- Bowen Flat Oval and Round Wire Travelers
- Bowen Patented No-Bow Vertical
- Bowen Patented Vertical Offset

U.S.

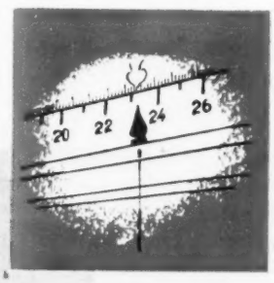
No. 3 OF A SERIES
BASED ON INTERVIEWS WITH TEXTILE MEN *who want more production*

today, is RESEARCH

You mill men know only too well that with the shortage of bronze and steel, the question of Research in metallurgy of Ring Travelers is more important every day. What you need are Ring Travelers with better running qualities, and better wearing qualities, to increase your production, and to cut your costs. This is especially important in the case of bronze Ring Travelers, because by proper heat-treatment, it may be possible to make a lower grade bronze last just as long as the present bronze Travelers you are using.

HEAT CONTROL

for better metal – dominates "U.S." production! Carburizing and tempering ovens are electrically controlled through pyrometers – for better performance.



Research in metallurgy and exact control of heat-treatment of metals are two of the principal steps in the production of U.S. Ring Travelers. We control the entire process of manufacture right from the initial selection of the metals through to the final treatment in the heat-treating furnaces that are controlled by pyrometers. This is modern electrical control – not any hit or miss process.

It means actually that the bronze or the steel Ring Travelers that you get from us go farther in every sense of the word because they are a product of this scientific metallurgical control from beginning to end. They are properly tempered. They will, to the utmost, resist heating up and cracking, and flying off the ring. You know what that means in cutting down production when travelers break and fly off – or crack when you try to snap them on or off. And they're correctly designed for balance, for lubrication, etc., more results of research – based on actual operation.

Research in metal composition and exact scientific control of tempering is only one angle of U.S. production. Every U.S. Ring Traveler is designed specifically for the type of work it is intended to perform. That is why it performs so perfectly.

If you are not getting perfect service from the Ring Travelers you are now using, don't hesitate to ask us to send up a man to render you real service – a man who knows what it is all about – a man familiar with all the many other factors (besides Traveler itself) that make or break production in spinning and twisting. Let him do a little research in your mill at our expense – for more and better production for the war effort.

If you want "the same as you've always used" in Ring Travelers – you can get it from "U. S." If you want helpful advice on improved Traveler design or service – "U. S." can give you that, too.

★ ★ ★ ★ ★

U. S. RING TRAVELER COMPANY

PROVIDENCE, AMOS M. BOWEN, Pres. and Treas. **RHODE ISLAND**

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RING TRAVELERS

A Traveler for Every Fibre

THE TRAVELERS THAT KEEP GOING!

U.S. RING TRAVELER CO.

The Rainbow of False Hopes

Comments by Henry G. Lord

Twenty-four years ago this month World War I ended in victory for the Allies.

I shall never forget Armistice Day. I was in England at the time and had been in the country over the week-end and came up to London on Monday morning. There had been many false rumors of an Armistice and most English people were skeptical that there would be one until we got to Berlin.

I had occasion to go to the Burlington Arcade that morning and was walking along Picadilly when, at eleven o'clock, the air raid sirens—or marroons as they called them—sounded a prolonged "All Out." It was the pre-arranged signal for the Armistice.

Every person and vehicle came to a dead stop. People came running to the doors and windows. The atmosphere was so tense it made you tingle. The end of the four long years of war had come.

There was no pandemonium or bedlam such as we had over here. Those Britons had too many memories to sadden their thanksgiving: but thousands turned with one accord to the Palace and the King.

A British major who had stopped near me when the Armistice signal sounded, rushed up, threw his arms around me and slapped my back. "The war is over old chap," he shouted. "Thank God." I answered and slapped *his* back. "Come on," said he, "let's get to the Palace." So arm in arm, like buddies, we hustled to Buckingham Palace with thousands of other hurrying Londoners.

A vast crowd filled the great space and were calling for the King. Presently the King and the Queen, with the little Princess Mary and the old Duke of Connaught, came out on the balcony. The crowd cheered and cheered and called for a speech. I couldn't hear what the King said, but there were great cheers. Then the massed bands of several of the Guards Regiments came out and played the National Anthem and then the Doxology. Women were sobbing; the tears were streaming down men's cheeks—mine anyway—and my major friend was choking and blowing his nose violently.

When I hear people talk about the reserve of the British people, I think of that hour in front of Buckingham Palace on Armistice Day.

* * * *

In its issue of November 1918, Textile World carried the following leading editorial:

Unconditional Surrender

"No two words variously written or spoken in divers tongues, and echoed round the world, are calcuated to bring greater joy to more human hearts than these two. The end has come and yet it is but a beginning—the passing of the old and the advent of the new. Death is swallowed up in victory and a new age is dawning. Blessed are we who stand upon the threshold of this glorious era and are privileged to take our part in the process of reconstruction."

That was the way we all felt. And we expected the leaders of the Allied nations to show us the right way to reconstruct the world.

They let us down!

Now we have a much greater world war to win. We shall fight, I hope, with less complacency and more leadership than we have now, until the victory. And then what? I hope our leaders will make a better job of the peace than their predecessors did in 1919.

HENRY G. LORD, *Vice-President of McGraw-Hill Publishing Co. and Founder of Textile World*

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For *Priorities* on tomorrow's Improvements

Plans to Saco-Lowell-ize* should be started Today

Saco-Lowell Shops

60 Batterymarch Street, Boston, Mass.

Charlotte, N. C. Greenville, S. C. Atlanta, Ga.

Until "V" day the building of new cotton-preparing and spinning machinery will continue to be subject to government control. But, although new machinery is not readily available now, there are many ways in which Saco-Lowell engineers and technicians can be helpful to you at this time.

For example — Saco-Lowell engineers, after inspecting your equipment, may be able to recommend settings and changes which will better the performance of your machinery. Also in cooperation with your own operating staff, Saco-Lowell engineers will prepare a fact-finding study of your requirements for a *Saco-Lowell-izing** program to be started when possible.

There is no doubt that the period immediately after "V" day will require drastic adjustments . . . and the completion of an improvement program now may give you "priority" at a time when there will be a great demand for new equipment.

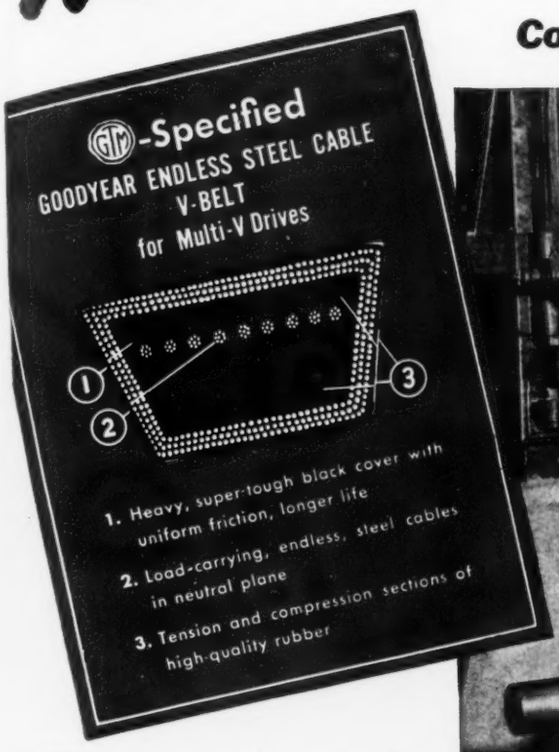
Mills interested in Saco-Lowell-izing* their plant to meet conditions in the postwar era are urged to begin their planning at once. Do not wait for "V" day.

*

To utilize floor space so as to achieve the ideal in continuity of production; to coordinate all successive steps in processing; to reduce waste, spoilage and useless transportation of stock; and to attain the greatest economy in maintenance and operating costs.

Here's THE ULTIMATE V-BELT

Constructed with endless steel cables



AFTER many months of research, development and field operation on the hardest drives, work has just been completed on another Goodyear "First"—the V-belt of the future, built with endless steel cables in place of conventional cotton cord construction.

In exhaustive tests this new Goodyear Endless Steel Cable V-Belt has averaged more than SEVEN times longer service-life than the best cotton cord belts — with less than ⅕ of 1% stretch.

The outstanding advantages of the Goodyear Steel Cable V-Belt, the latest addition to the outstanding line of Black E-C Cord Multiple V-Belts, make it possible to engineer Multi-V drives where space limitations and other engineering factors formerly denied their usage.

Greater Strength Factor: far heavier drives can now be changed over to economical Multi-V operation.

Highest Heat Resistance: proved on U. S. Tanks.

Minimum Stretch: practically zero stretch with fewer adjustments.

Uniform Stretch: every belt takes its proportional share of the load, giving smoother operation.

Far Longer Life: lowest over-all cost for heaviest drives.

So successful is this construction proving, that new high standards are set in all phases of Multi-V drive performance and wartime production is speeded up. Its many advantages and economies are another Goodyear "First"—a triumph of G. T. M. rubber engineering — at present only available for special war jobs and critical drives for war work operation.

For complete information, consult the G. T. M. — Goodyear Technical Man — or write Goodyear, Akron, Ohio, or contact the nearest Goodyear mechanical goods distributor.

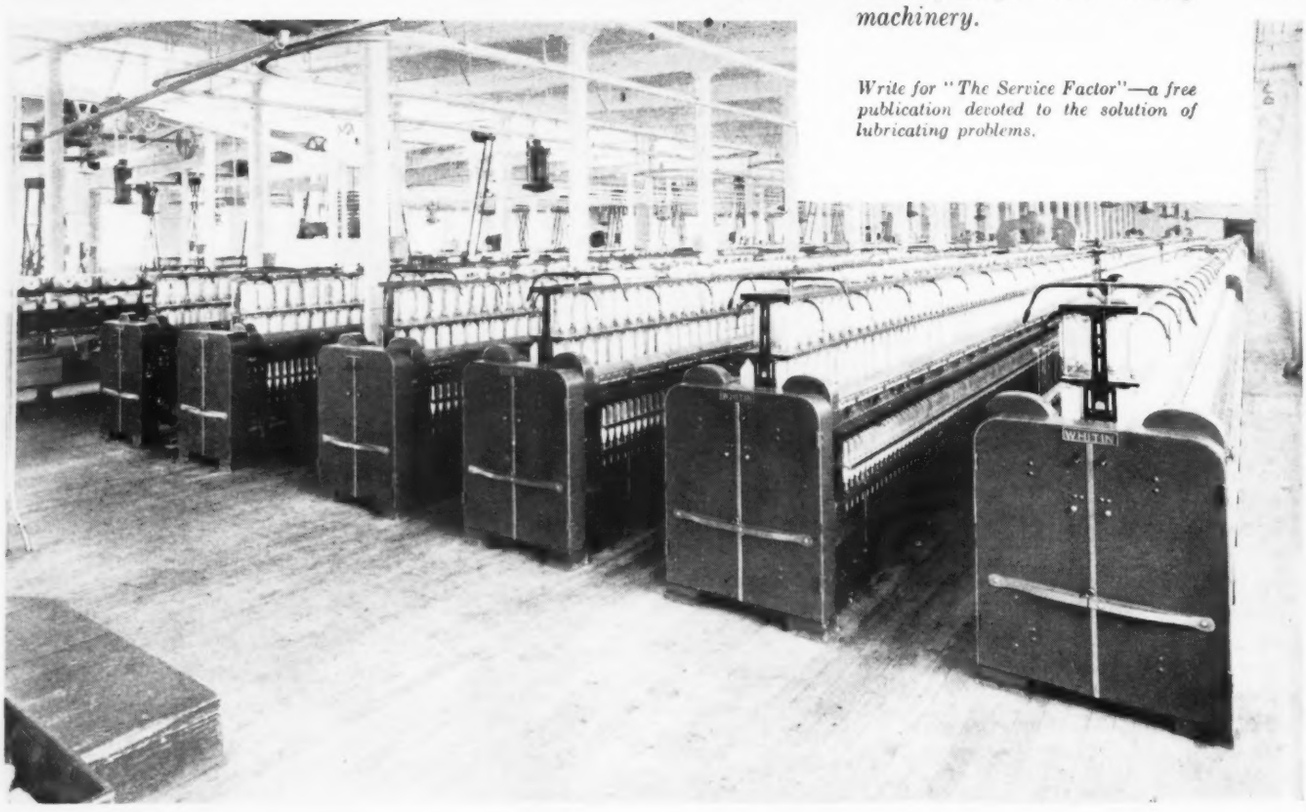
E-C Cord—T.M. The Goodyear Tire & Rubber Company

PROVED ON U. S. TANKS — ordinary fan belts "burn out" in a few hours — Goodyear Steel Cable V-Belts last months!

SECOND FRONT STRATEGY needs home front strength. For maintenance of full scale operation with today's necessary conservation of equipment in *TEXTILE MILLS* use . . .

. . . SINCLAIR LILY WHITE OILS. The stability of these oils assures lasting lubricating protection and negligible drag at highest spindle speeds. Sinclair also offers quality oils for *knitting machinery.*

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

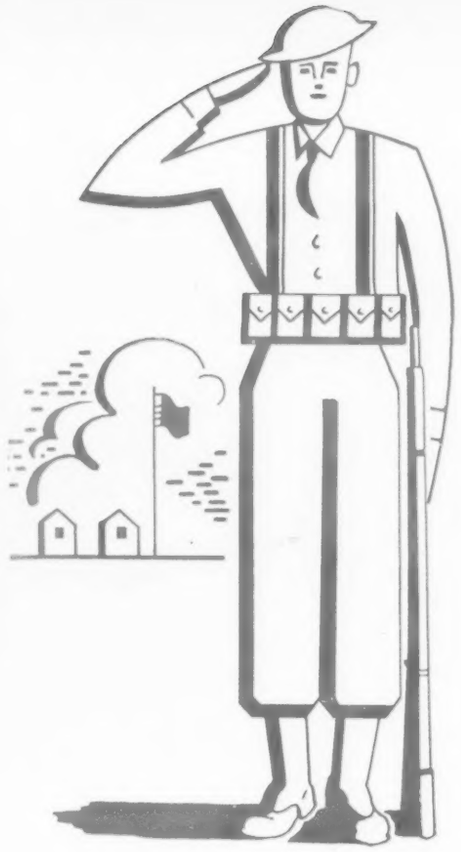


SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

SINCLAIR REFINING COMPANY (Inc.)

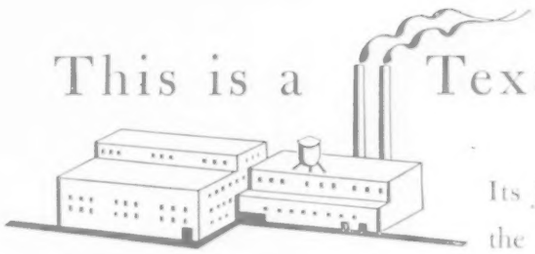
2540 West Cermak Road, Chicago • 10 West 51st Street, New York City • Rialto Bldg, Kansas City • 573 West Peachtree Street, Atlanta • Fair Building, Ft. Worth



This is a Soldier

He is one of the millions of those in our services who must be clothed properly.

This is a Textile Mill



Its job is to produce the material to clothe our soldiers, sailors, and marines.

This is the Hercules Experiment Station

Its job is to develop Hercules chemical materials to help industry do its tasks quicker and better. For the emergency demands of the textile industry, it developed Yarmor 302-W Pine Oil.

This is a drop of Yarmor* 302-W Pine Oil

Its job is to help speed the goods through the textile mill. By penetrating the fibers and holding the dirt and grease in suspension for easy rinsing, it saves as much as 30% in the fulling operation—does its stuff, too, in kier boiling and as a dye assistant. And it is saving time in lots more operations—for lots more clothes—for lots more soldiers.

NAVAL STORES DEPARTMENT

HERCULES POWDER COMPANY

Incorporated

994 MARKET STREET • WILMINGTON • DELAWARE

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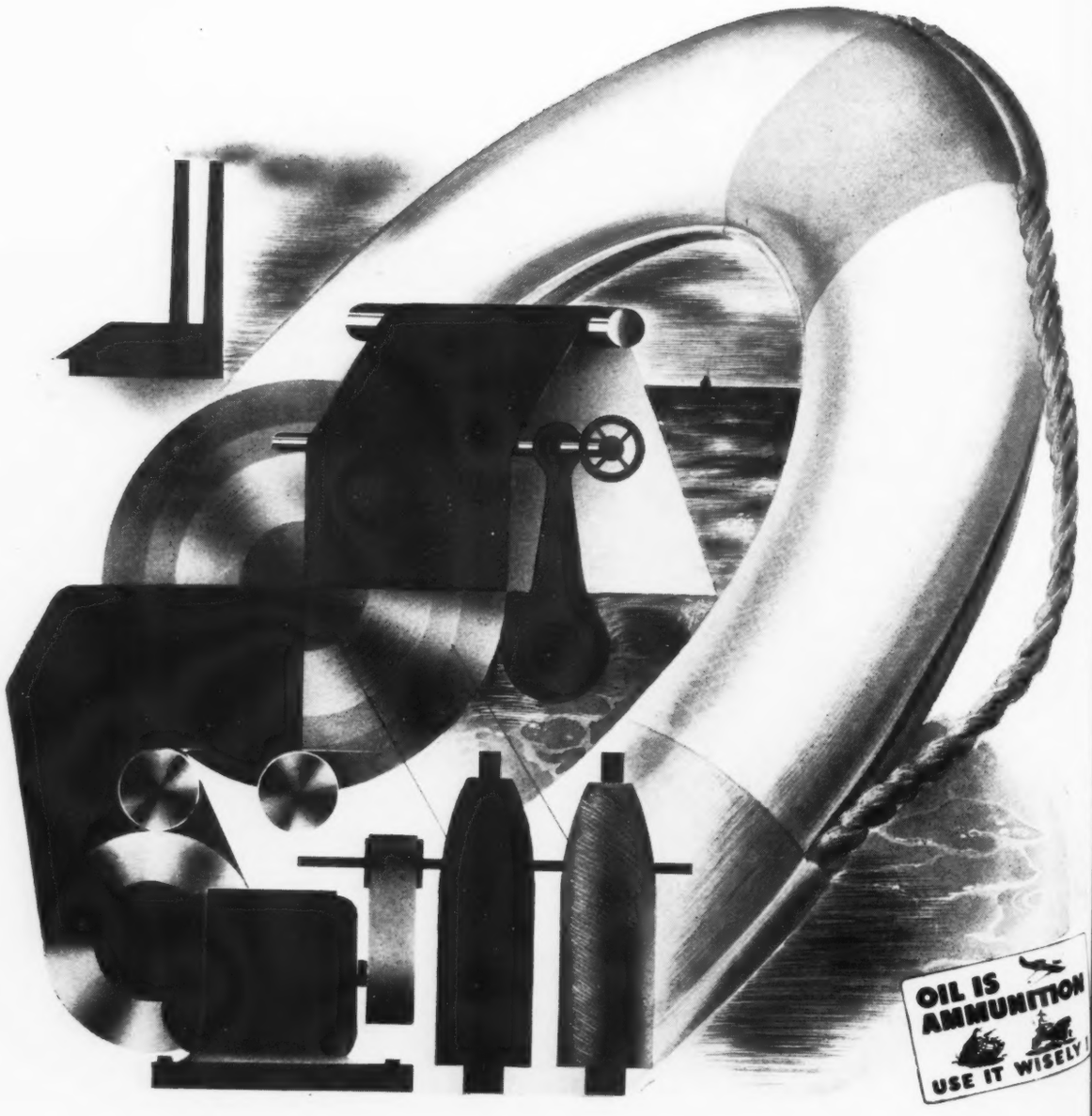
Reg. U. S. Pat. Off., by Hercules Powder Company

life preservers... for



busy textile machines

TIDE WATER TEXTILE OILS

help maintain maximum production with minimum wear

Textile operators who depend on Tycol Textile Oils enjoy this double insurance against machinery breakdowns, costly repairs and interrupted production:

1. Tycol Textile Oils are quality lubricants, made by the most modern scientific methods.
2. Every Tycol lubricant is engineered to meet a specific operating condition, and there's a Tycol Oil or Grease for every lubricating need.

For these two important reasons hundreds of textile mills are safeguarding peak production schedules by using Tycol Textile Oils right down the line – from power plant to finishing.

A Tide Water lubrication engineer will be glad to consult with you and recommend the proper Tycol lubricating oils and greases to assure maximum production at minimum cost. There is no obligation to you for this survey. Write for full information to Tide Water Associated Oil Company, 17 Battery Place, New York, N. Y.

DRUMS! DRUMS! DRUMS! DRUMS!
War needs make it extremely important that all empty drums be returned immediately.

TIDE WATER ASSOCIATED OIL COMPANY
EASTERN DIVISION: 17 BATTERY PLACE, NEW YORK
Principal Branch Offices: Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

MAKERS OF THE FAMOUS VEEDOL MOTOR OIL

A Recent Installation of Four SARGENT STOCK DRYERS
in a Progressive New England Worsted Mill

A Production Problem Solved -

• • • THIS IS THE IMPORTANT FACT!

Advantages of this modern installation

— Stock dried at lower temperatures — The use of low pressure steam
— Lower power consumption — Less floor space required
— Costly repairs and breakdowns eliminated — A better product

Why not let SARGENT solve your Drying troubles?

Important Defense Items by SARGENT	Machines for Smokeless Powder Plants • Machines for Synthetic Rubber Plants • Textile Machinery for the manufacture of uniforms • Machined parts for large caliber guns

C. G. SARGENT'S SONS CORPORATION

Graniteville, Massachusetts, U.S.A.

How NOT to do it! Don't nail up a board to keep belt on pulleys. Align pulleys correctly and keep them clean.

Note how belt hugs clean, correctly aligned pulleys. Belt runs true and is in excellent condition after three years because of daily checking and cleaning.

★ WAR on *Wear!* ★

MANHATTAN'S suggestions for the Care of POWER TRANSMISSION BELTS

THE greater the output, speed and strain, the greater the belt wear. "Keep 'em running" on the factory front—with less wear and trouble—by following these simple instructions.

1. Do not allow oil, grease or gasoline to come in contact with belt.
2. Avoid exposing belts to sunlight and excessively hot or cold weather.
3. Avoid heavy overloads.
4. Don't leave tools or other objects near belt to get caught in drive.
5. Don't allow belt to rub against stationary objects. (See inset photograph.)
6. Use right size and type of belt on pulleys of correct size—too small pulleys shorten belt life.
7. Do not try to take out all stretch on new belt. Install only tight enough to pull load without slipping—then shorten only if necessary.
8. Use proper type fasteners of correct size for pulleys.
9. Keep tight side down for greater arc of contact and more power.
10. Pulleys with excessive crown cause fastener failure.
11. Do not apply large belts by rope and power.
12. Use constant tension motor base on short center drives.
13. Cut belt square and line up before splicing. Seam side away from pulleys.
14. Keep pulleys clean, in good condition and in correct alignment so that belts will run true and wear evenly.
15. Keep proper tension. Too tight a belt may cause fastener and bearing trouble; too loose, slip and wear.
16. If dressing is necessary, use type recommended by belt manufacturer. Never use rosin. Correct fault in drive instead of dressing belt.
17. Provide take-up facilities.
18. Inspect splices and remove worn fasteners before they cause injury to belt.
19. Avoid slippage, evidenced by polished surface.
20. Use factory-made endless belts whenever possible.
21. Cut down large worn belts into smaller sizes for light drives.
22. Consult your MANHATTAN representative. Write factory or your distributor.

Inspect daily with special reference to above suggestions. It is constant care that reduces wear and keeps your belts turning your machines with the minimum of stoppage.

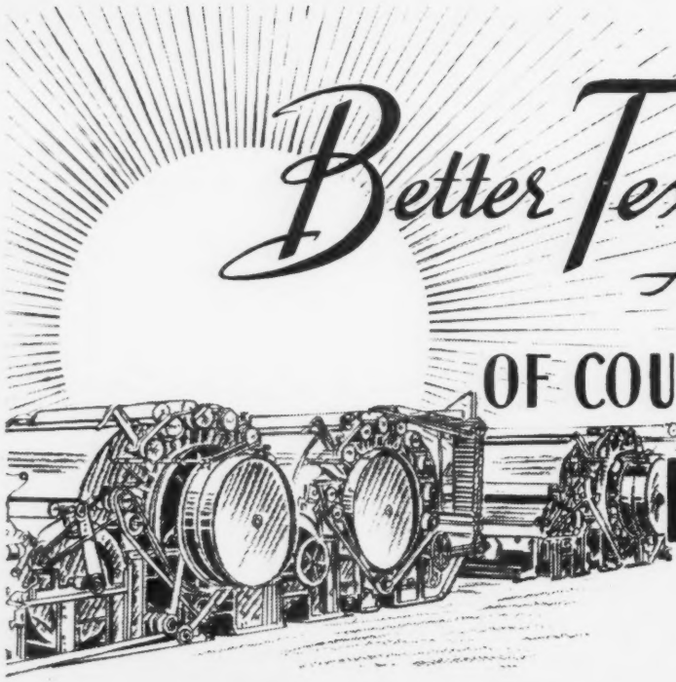
"Care of Power Transmission Belts" wall cards available for your maintenance department — also for Hose, V-Belts and Conveyor Belts. Write for those you want.

KEEP AHEAD WITH

MANHATTAN

THROW YOUR SCRAP INTO THE FIGHT!

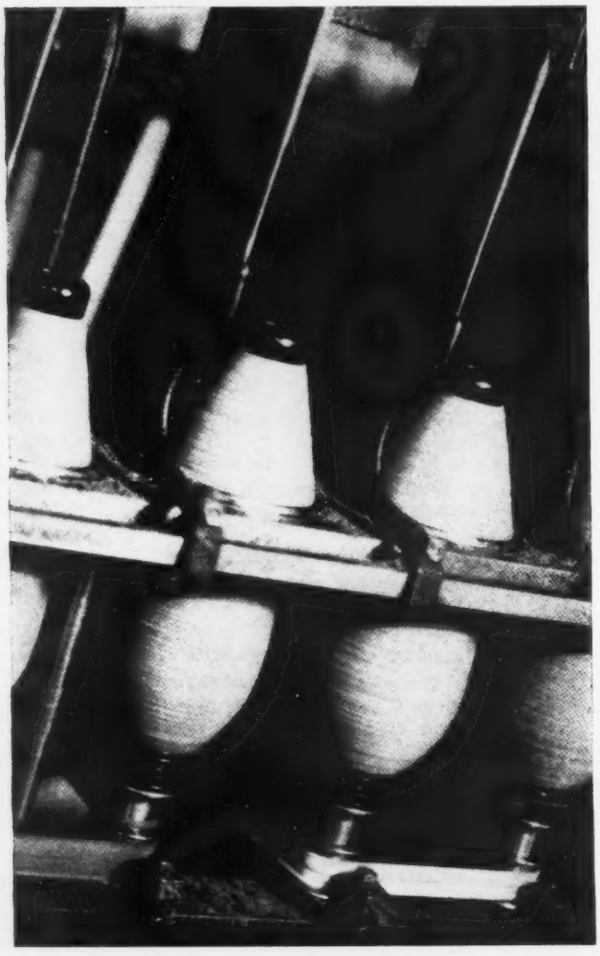
THE MANHATTAN RUBBER MANUFACTURING DIVISION
of RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES PASSAIC, NEW JERSEY



Better Textile Machines After the War?

OF COURSE, but for the Present—

KEEP THOSE SPINDLES TURNING!



The tremendous impetus given to industry by an impelling necessity for production for war will be reflected in the post-war period in vastly improved processes and materials. The textile industry will unquestionably be bigger, better and stronger for the lessons learned during the war.

We in the textile machine business, too, are learning many new things which will help us to make better designed, better engineered and better built textile machinery.

During the emergency it is probably going to be very difficult for many mills to obtain new machinery because most of the energy and plant of machine builders are converted to the war effort.

For the present, therefore, we urge that existing plant be kept in condition to insure full operation at maximum production by regular check-ups for machine alignment and adjustment. Substitute new parts where they are needed, and before actual breakdowns occur. When this is done insist upon replacements made by the builder of your machines . . . the one most vitally interested that you shall get the utmost from his product.

WHITIN MACHINE WORKS

WHITINSVILLE, MASS., U. S. A.

CHARLOTTE, N. C. ATLANTA, GA.

Quicker Production – Better Lighting with Day-Brite Industrial Fixtures

The DAY-LINE CONTINUOUS
For 2-40 watt, 3-40 watt and 2-100 watt lamps.
WITH NON-METALLIC REFLECTORS
DAY-BRITE
RLM
Day-Brite's Exclusive "ICE-TONG" HANGER CLAMPS
Patent Applied For
"Ice-Tong" Principle — weight of fixture holds it in place while single clamp screw is tightened.
The DAY-LINE UNIT
For 2-40 watt, 3-40 watt and 2-100 watt lamps.
WITH NON-METALLIC REFLECTORS

THE DAY-BRITE LINE IS COMPLETE

Factory, Office or Engineering Department Fluorescent Lighting Fixtures of all types — all engineered to fully utilize the higher efficiency of fluorescent lighting.

THREE ADVANTAGES are combined in the Industrial Fluorescent Fixtures comprising the Day-Brite Victory Series: (1) High reflection values and long life are assured by Day-Brite's "Super-White" baked enamel finish on non-metallic reflectors . . . (2) Speed in installation and ease of servicing are achieved through simplified mechanical design . . . (3) Maximum rigidity of the entire installation is assured by truss-like construction.

Call your Day-Brite Engineering Representative.

DAY-BRITE LIGHTING, INCORPORATED
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DayBrite Rivals Daylight — Adds Victory Hours!

Design Patent No. D-133,458
Other Patents Pending

Day Brite FLUORESCENT FIXTURES

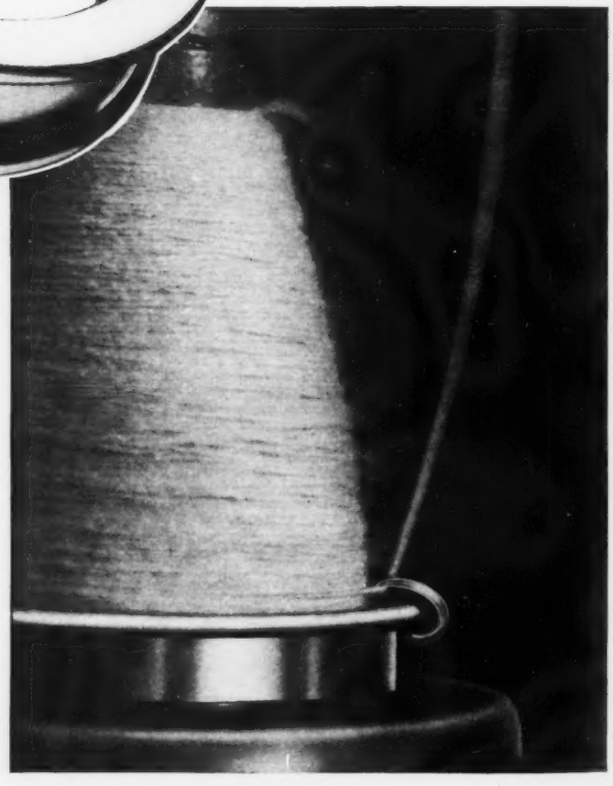
The COMPLETE LINE OF FLUORESCENT LIGHTING FIXTURES *Nationally distributed through all leading electrical supply houses*

PAWTUCKET RINGS *Vitritex* FINISH

Many factors contribute to the spinning of good yarn . . . and the ring is one of them. When old and worn it affects the performance and life of the traveler—and thus indirectly affects the quality of the yarn by causing variations in the size and tension of the balloon.

The efficiency of a ring depends upon the permanence of its finish. The finish on a Pawtucket Ring is an exclusive development. It is glass-smooth, hard as granite, and highly resistant to wear. The texture of this finish is so fine grained that it is nearly non-porous. Thus it is almost impervious to the tarnishing effects of moisture in the highly humidified spinning room.

Pawtucket Rings are a definite contribution to good spinning, steady production and better traveler performance. We will gladly furnish samples on which you can make your own tests.



GIVE YOUR TRAVELERS
"A TURN FOR THE BETTER"

Pawtucket SPINNING RING COMPANY, CENTRAL FALLS, RHODE ISLAND
(Subsidiary of Saco-Lowell Shops)

Their Loss is the Victory Program's Gain

Hats off to the Misses of America who are sacrificing the glamour and individuality of style that go with Franklin Process yarn-dyed fabrics, so that our armed forces may be quickly and economically equipped.

Their loss is the Victory Program's gain because:

1. Our four dye houses assure local, neighborly yarn dyeing service for four major textile centers.
2. Our large capacity and experience promote prompt deliveries to manufacturers of military fabrics.
3. Our method of dyeing aids in accurate matching and quick corrections of shades.
4. It saves critical materials by using a minimum amount of dyestuffs and chemicals.

Let the Misses of America, through Franklin Process, help YOU to hasten **VICTORY.**

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

★ Providence, Philadelphia, Greenville, Chattanooga; New York Rep., 40 Worth Street; Chicago Rep., 100 W. Monroe Street.

HOW TO GET LONGER LIFE *and* BETTER WORK FROM CARD CLOTHING

DON'T GO AT IT THIS WAY— WHEN YOU SELECT WOOL FANCIES

Woolen and worsted mills use a great variety of fibres and blends. Therefore it is not surprising that they require almost as great a variety of card fancies. Last year we produced more than 80 different types in just one of our plants.

Obviously then the selection of the right fancy for the purpose should not be left to chance or to the inexperienced. Ashworth can help you in this respect. Our experience dates back to the earliest days of the card clothing industry and our 3 factories, 6 repair shops and 7 distributing points assure better service than might be expected under present abnormal conditions.

ASHWORTH

PIONEERS IN CARD CLOTHING . . . *ASHWORTH BROS., INC.*
Woolen Div. AMERICAN CARD CLOTHING CO.

3 FACTORIES — FALL RIVER, WORCESTER, PHILADELPHIA

6 REPAIR SHOPS — FALL RIVER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

7 DISTRIBUTING POINTS — FALL RIVER, WORCESTER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

SOUTHWESTERN REPRESENTATIVE: • TEXTILE SUPPLY CO., DALLAS, TEXAS

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed

trouble shooters

Mills geared to wartime efficiency value the name Eastman in rayon. It assures them yarn of a single high standard . . . yarn that works up smoothly, speedily, into fabrics of recognized quality . . . yarn that can be counted on to simplify production problems.

Multiple tests **for yarn uniformity in Eastman's famous laboratories help a mill to conserve its energies . . . stop trouble before it starts. That's why KODA, continuous filament acetate rayon, is unsurpassed for easy running; why TECA, crimped acetate rayon staple, is today's preferred fiber for blends.**

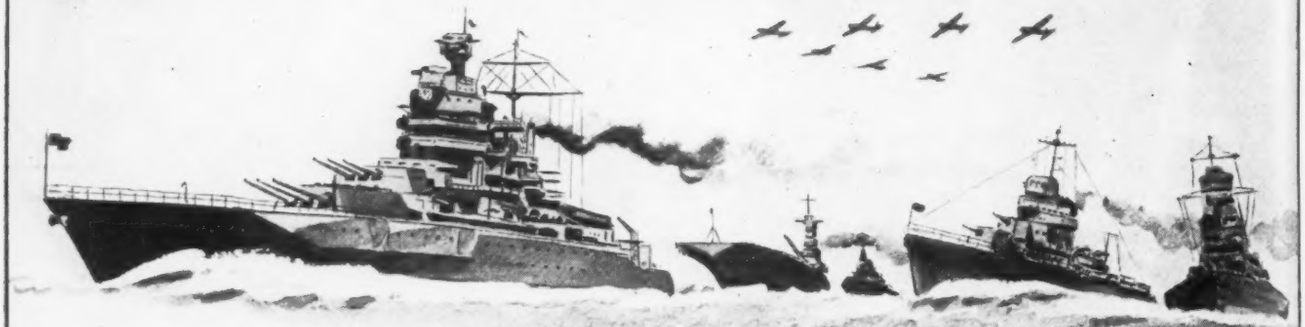
Eastman

ACETATE RAYON

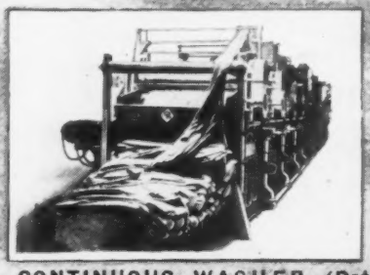
For further information about Eastman acetate rayon, consult A. M. Tenney Associates, Inc., 10 East 40th Street, New York, sales representatives for the Tennessee Eastman Corporation, subsidiary of the Eastman Kodak Company.

The Fleet Line

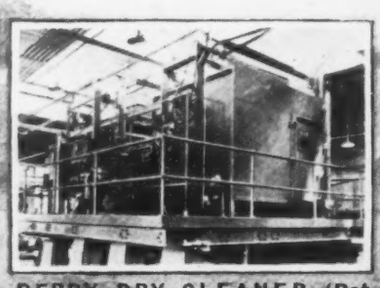
OF FINISHING EQUIPMENT



INCLUDE THESE MACHINES IN YOUR AFTER-THE-WAR PLANS

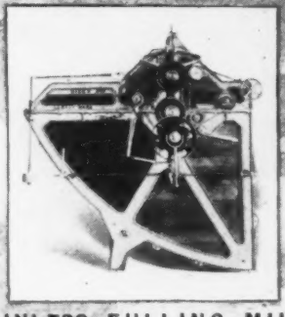


CONTINUOUS WASHER (Patented) First machine of its type to successfully handle heavy and dirty fabrics as well as light weight fabrics. Production is from 13 to 54 yards per minute. Automatic control permits one operator.



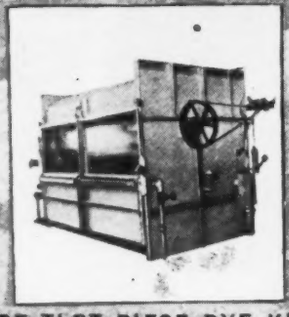
DERBY DRY CLEANER (Patented) Cleans cloth direct from loom with non-inflammable solvent, which is recovered. Removes tar, chalk marks, paint and 99.8% of process oil, which also is recovered and used again. Scouring eliminated. Other important savings.

STAINLESS STOCK DYE KETTLE. Unit construction eliminates outside circulating pipes. Pump, submerged in dye liquor, requires no packing. Motor on top, easy to reach and keep clean. Stock unloaded on false bottom with electric hoist.



STAINLESS FULLING MILL. Replaces 2 or 3 old mills and handles from 2 to 14 pieces at one time. Pays for itself in 3 years or less time, because of increased production and savings in soap, dead loss and labor. Uniform and superior finish.

CARBONIZING RANGE. Includes wet out box, squeeze rolls, soaking tank, acid squeeze rolls, tenter dryer, baker, crusher and neutralizer. Production is continuous and this particular range will carbonize 32 oz. fabrics up to 80" wide from 17 to 20 Y. P. M.



TYPE TLBT PIECE DYE KETTLE. Extra large drum type reel with Multi-Grip partially knurled surface virtually eliminates tangles, tie-ups, wrinkles, creases and streaks. Substantial savings in all classes of dyestuffs. Wide adaptability. Stainless steel.

RIGGS AND LOMBARD

INCORPORATED

Foot of Suffolk Street, Lowell, Mass.

ALSO: Batch Washers • Dye Becks • Rope Soapers • Soaping Machines • Pusher Mills • Soap Distributing Systems • Bleach Tubs • Top Dyeing Machines • Yarn Steamers

MEET FEDERAL STRAPPING SPECIFICATIONS

WITH

Acme Steelstrap

Steel strapping to meet all Federal Strapping Specifications . . . equipment to speedily and economically apply the strap to shipping packs . . together with competent counsel on the strapping operations are available to all concerns with Government contracts.

Acme Steelstrap is furnished in all sizes specified by the authorities. And to reduce strap-applying costs you'll need Acme Steelstrappers . . . one-piece, magazine seal-fed strapping tools which do the job faster and easier. With this equipment, one shipper effected a saving of 35% in material and labor. Others report equally successful results.

Direct representatives, experienced in helping shippers fulfill Government requirements . . . are available. They can help you with your strapping problems, show you ways to speed up the application of strap. Write, 'phone or wire the nearest Acme office.

Also available from Acme are Silverstitchers (carton stitching equipment) and Silverstitch carton stitching wire.

Check List of ACME PRODUCTS for fulfilling GOVERNMENT ORDERS

- ☐ STEEL STRAPPING
- ☐ STRAP-APPLYING TOOLS
- ☐ STRAPPING ACCESSORIES
- ☐ CARTON STITCHERS
- ☐ STITCHING WIRE

Write, 'phone or wire for complete information. No obligation.

ACME STEEL COMPANY 2838 ARCHER AVENUE, CHICAGO, ILLINOIS

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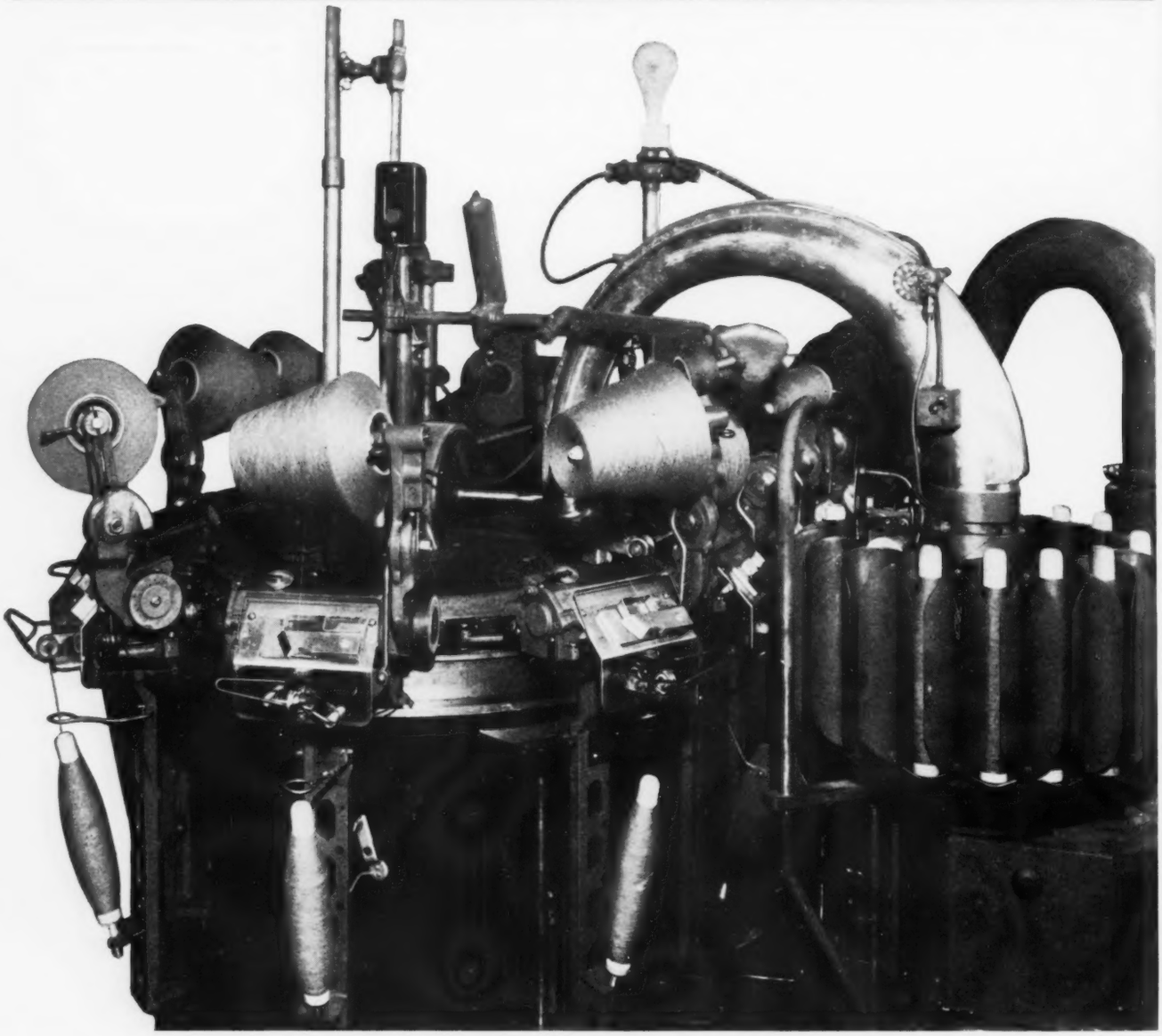
Also Branches and Sales Offices in Other Principal Cities

Wind Knitting Cones at
1/3 YOUR PRESENT COST



With the Automatic
Knitting Cone Winder

ABBOTT MACHINE COMPANY

Wilton, N. H.

Southern Representative, L. S. Ligon, Greenville, S. C.

Overhead Handling REDUCES Handling Overhead

. . . that's why so many Textile Mills have installed

AMERICAN MONORAIL SYSTEMS

Crane servicing one area latches with spur tracks to other departments.

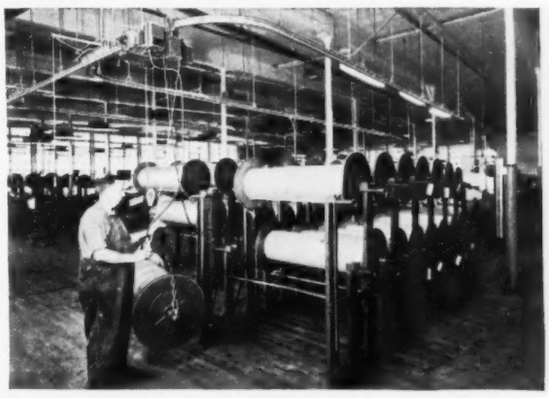
HANDLING operations in the textile industry through all the various processes make up a large part of the finished product cost. You can save a considerable part of this cost with American MonoRail Overhead Handling Equipment.

This system greatly simplifies handling methods and avoids using skilled labor for handling operations. It releases floor space for profitable use, permits accessibility to machines through narrow alleys and often eliminates storage by providing free movement of stock between processes.

When heavy loads are carried overhead, product, machinery and floors are all protected. Handling stains on yarn or fabric are reduced—floors no longer are subject to excessive wear—beams are creeled and doffed with ease and less damage to machinery and less hazard to operation.

Let an American MonoRail Engineer show you the cost-reducing possibilities and the suprisingly low cost of installation and operation.

● MonoRail crane system solves the handling problem in the dye house.



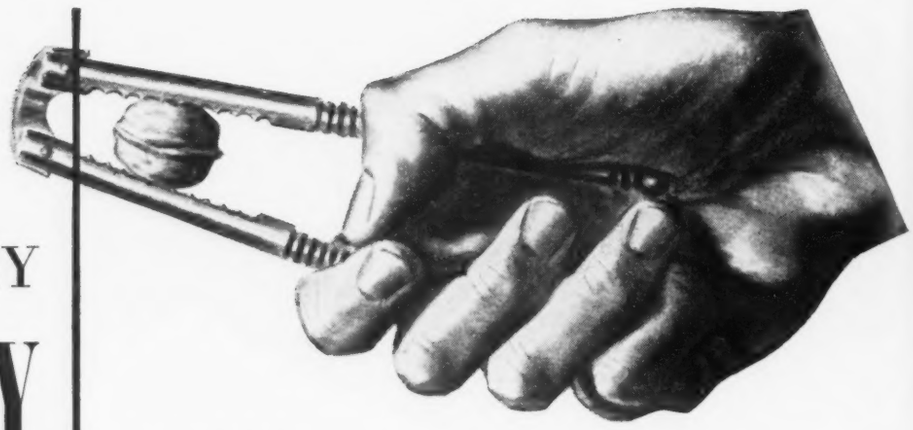
● Simple method for creeling slashers with electric hoist on MonoRail spurs.

Send for this Book

THE AMERICAN MONORAIL CO.

13108 ATHENS AVENUE **CLEVELAND, OHIO**

BRING ON THOSE QUESTIONS

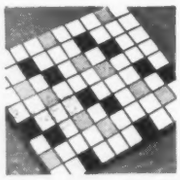


THAT'S WHY 4-PLY SERVICE WAS BORN!

No matter what phase of rayon production interests you, our 4-PLY SERVICE can be of aid to you. We don't know all the answers, of course. But, over a period of years, we have discovered much of value to those in the textile industry. We expect to amass more "know how"... to develop new fibers and new techniques ... to solve more problems as we go along. This whole storehouse of information is available to you without a penny of cost. If you have a question, bring it direct to a great rayon headquarters—American Viscose Corporation. We welcome opportunities to be of assistance.

1 ***Fiber Research.*** In our laboratories and pilot plants scientists are constantly at work ... perfecting types of rayon yarn and fiber now available ... creating new types to meet specific problems.

2 ***Fabric Development.*** A great department is devoted to this phase of the rayon industry. It can work with you ... help you design new and successful fabrics which you can produce efficiently on your existing machinery.



3 ***Mill Technique.*** Do you have a mill problem? Our Textile Unit, which is equipped with standard machinery for virtually every phase of textile production, can help you to solve problems in weaving, dyeing, and finishing.

4 ***Sales Assistance.*** The CROWN* Tested Plan helps sell serviceable rayon fabrics ... from raw materials to ultimate consumer. This plan helps you to establish and maintain the quality of your new fabrics containing CROWN Rayon.

AMERICAN VISCOSE CORPORATION

Producers of CROWN *Rayon Yarns and Staple Fibers*

Sales Offices: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.
Plants: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

*Reg. U. S. Pat. Off. Copr. 1942—American Viscose Corp.

★

We'll keep 'em flying
If we keep buying
. . . BONDS!

★

"*Finnell* COMBINATION SCRUBBER
FAR EXCEEDS OUR EXPECTATIONS"
TWA

"For more than two years," writes the Maintenance Foreman of TWA, "we have been using the *Finnell Combination Scrubber* at our La Guardia Field Hangars, with such gratifying results that I feel impelled to report our satisfaction to you.

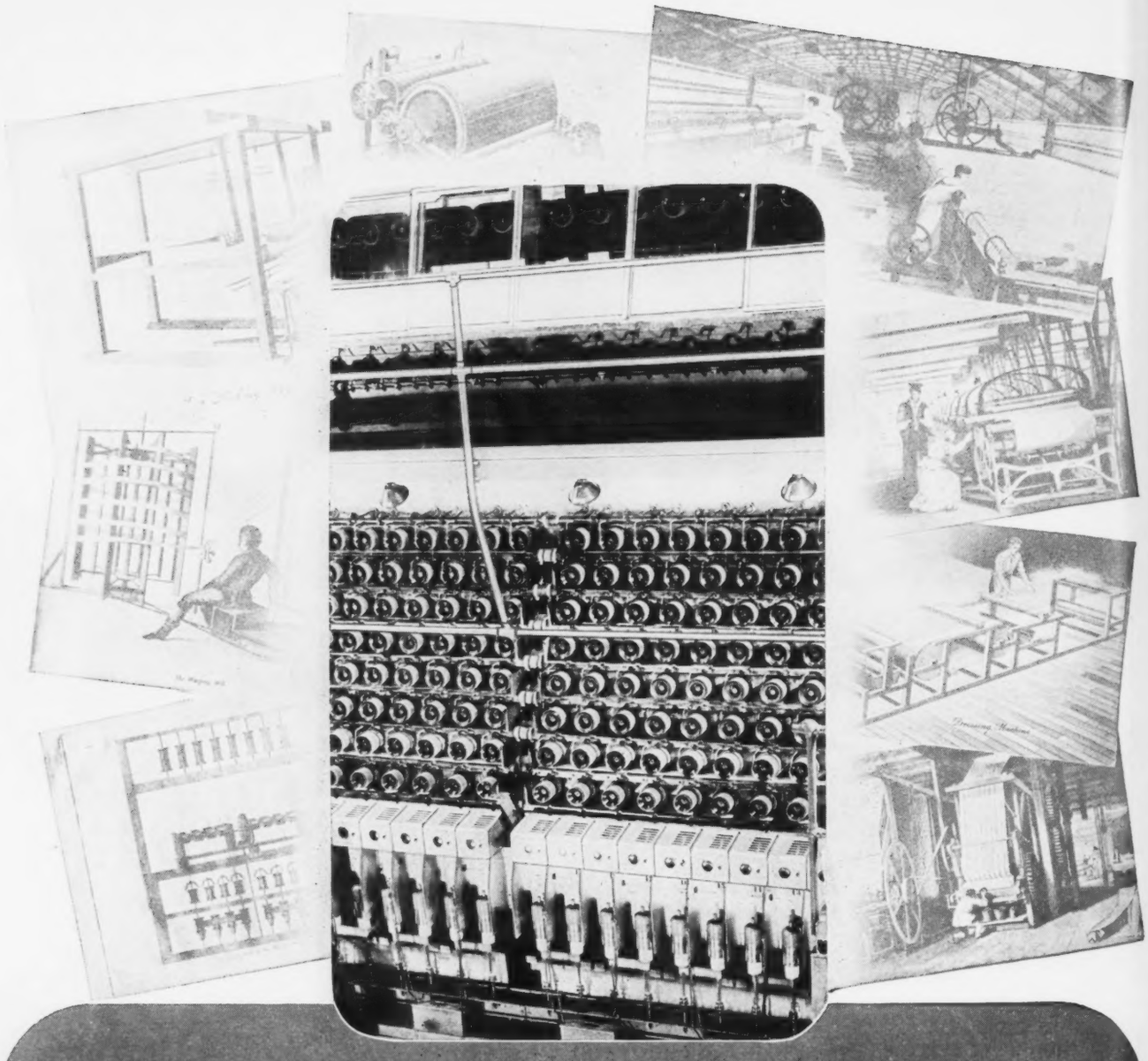
"So efficiently does the machine operate that we have found that it would be possible, if necessary, for one man to clean the entire floor of one of our hangars, a surface of more than 55,000 square feet, in a single day.

"Not only does the scrubber clean the surface thoroughly with a minimum of splashing and excess water, but it has cost us virtually nothing in the way of upkeep for the two years we have been using it. In fact, the performance of the *Finnell Combination Scrubber* far exceeds our expectations."

Wherever oil and grease accumulate on large-area floors—in airplane hangars, war production plants, textile mills—the *Finnell Scrubber-Rinser-Drier* solves the problem of rapid removal . . . provides safer floors for workers and reduces fire as well as accident liabilities.

For free floor survey, literature, or consultation, phone or write nearest *Finnell* branch or Finnell System, Inc., 1911 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.
Pioneers and Specialists in
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES
BRANCHES IN ALL PRINCIPAL CITIES



Continuous Process Makes Textile Progress

TEXTILES are as old as civilization, but the methods used to produce them remained unchanged for centuries.

Textile progress dates from the introduction of the first continuous process. It accelerated production, improved quality and increased uniformity to such a degree that every step in manufacturing had to adopt a continuous process to keep pace. These processes changed the manufacture of textiles from a home craft to a giant industry.

To rayon, the mighty infant among textile fibres, fell the privilege to develop the most revolutionary continuous process of all. It is a process which spins, washes, bleaches, treats, dries and twists viscose process rayon yarn in one continuous operation.

The SPUN-LO RAYON yarn it produces is more uniform in strength, lustre and denier and is virtually free from knots and broken filaments. The cloth made from this yarn is of higher quality and more uniform. It increases mill efficiency because loom-stoppage and seconds are reduced.

"CONTINUOUS PROCESS" Spun-lo Rayon
Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION • Cleveland, Ohio—New York Office, 500 Fifth Avenue

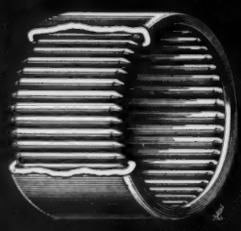
As the demand for anklets of many types increases, the need for fine workmanship in producing them increases also. Whatever type you produce, remember that the proven quality of Torrington Needles can add quality to their construction. For Torringtons are the *machine-made* needles that are distinguished for the uniformity of their temper, finish and dimension. This uniformity contributes in a definite way to the even knitting which is such an important factor in merchandising.

TORRINGTON latch NEEDLES

The Torrington Company, Torrington, Conn., U. S. A., Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C. • Boston • St. Louis • Los Angeles • Toronto, Canada

...AND IN AMERICA'S WAR PRODUCTION MACHINERY



IN OTHER YEARS, production machinery had a comparatively easy time of it—even for this country, birthplace of mass production. But nowadays, plant equipment is subjected to extremely heavy intermittent loads, hums faster than in any peacetime period, without letup.

To keep the nation's war production moving at top speed around the clock, tougher materials had to be developed... many machine parts redesigned. But the only "change" industry required of the Torrington Needle Bearing was its conversion to war production. In the heavy-duty machinery of America-at-war, this unique bearing is again proving its adaptability — in applications where its definite advantages mean more than ever.

Its low coefficient of friction is assuring smooth performance... its high capacity and efficient lubrication are reducing the need for replacement or maintenance attention, enabling management—through steadier production—to turn out greater quantities of war equipment. From the standpoint of the machine builder, the Needle Bearing's small size, saving space and critical materials, and its remarkable ease of installation, cutting assembly time, mean faster delivery of production machinery to wartime assembly lines.

And so it is easy to see why the Needle Bearing was one of the first machine parts to "change over" and why, too—with the war production program increasing in volume and intensity—no further change has been necessary.

***IN ADAPTING** the advantages of the Needle Bearing, the experience of Torrington's Engineering Department is at your disposal. Information on capacities and sizes is given in Catalog No. 116. We invite you to write today.*

LET'S GO! U.S.A. KEEP 'EM FLYING!

THE TORRINGTON COMPANY

TORRINGTON, CONN., U. S. A. • *Est. 1866*

Makers of Needle and Ball Bearings

New York · Boston · Philadelphia · Detroit
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San Francisco · Toronto · London, England

TORRINGTON NEEDLE BEARING

Every feature fills a wartime need

Helps to Conservation by Tubize

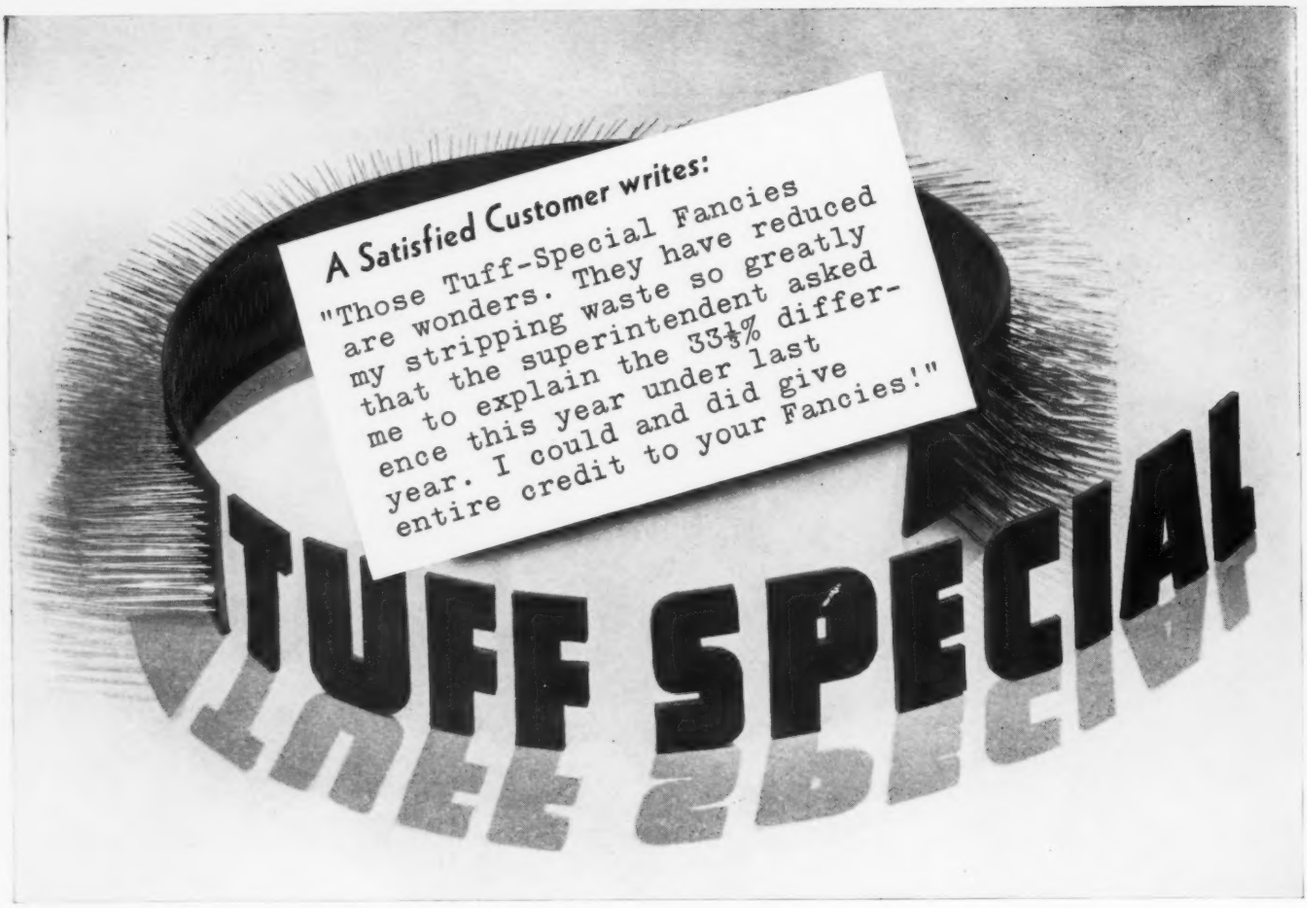
A Morale Builder
A touch of Glitter
FOR YOUR OFF-DUTY DRESS
Rayon triumphs in Evergrand, a "clothy" crepe of Tubize Rayon...new, slim skirt with sequin-trimmed "waistcoat." Sizes 12-20...under $25.00. Higbee, Cleveland; Hudson, Detroit; Elder & Johnson, Dayton; Jeleff's, Washington; Young Quinlan, Minneapolis; Nieman Marcus, Dallas. For other stores write Famous dress Co., 2530 Superior Ave., Cleveland, Ohio.
Evident Quality
Where to Buy
Conservation Hints
Fine fabrics are precious these days! To lengthen the life of your wardrobe, heed the advice below for its Care and Upkeep...
• A well-fitted dress looks twice as smart...lasts longer. See that your dress fits well.
• Be sure to put shield in at once...and change them frequently; perspiration weakens and discolors fine fabrics.
• Plan a week's wear ahead...give your clothes a chance to hang wrinkle free by alternating their wear.
• Hang your dresses carefully...use shoulder covers and garment bags to keep dresses dust free.
• Prompt treatment of stains is important...don't wait until your clothes are badly soiled before dry cleaning.
• Don't spray perfumes on fine fabrics...and use deodorants strictly according to directions.
• Make small repairs while they're still small...sew up split seams, fasten loose buttons and snaps.
• Freshen your dresses often—but never in the sun.
• Prevent "iron" marks by pressing on wrong side with a steam iron or over a slightly dampened press cloth...Use a warm—never hot—iron.
• Don't throw away tags or labels...they may contain information useful to you or your dry cleaner.
Advertisements like this in GOOD HOUSEKEEPING, LIFE, VOGUE and MADEMOISELLE are helping American women to save and serve.
A Known Standard
fashioned in TUBIZE certified quality RAYON
The Tubize Certified Quality label sewn in the seam of your dresses or lingerie not only indicates that the fabric is made of Tubize Rayon but that it has been tested and is certified to be satisfactory in respect to strength, color and cleanability. Tubize Chatillon Corporation, manufacturers of Rayon Yarns and Fabrics, Two Park Avenue, New York City.

How versatile rayon is! Think of the countless rayon fabrics of infinite variety—beautiful, serviceable and economical—that are available to Civilian America. Fabrics woven and knitted of Tubize Rayon hold an important place both in the dress and underwear fields—these fabrics are identified by the Tubize Certified Quality Label: an assurance to merchant and consumer that they have been tested and are certified for color, wear and cleanability—and now Tubize adds an important wartime conservation service by teaching women in national advertising specific ways to make their dresses and lingerie last longer.

TUBIZE CHATILLON CORPORATION, 2 PARK AVENUE, NEW YORK • *Acetate and Viscose Rayon Yarns and Fabrics*

fashioned in TUBIZE certified quality RAYON

The Tubize Certified Quality Label on your merchandise adds more than an extra sales stimulus...it adds an assurance to both merchant and consumer that the fabric is serviceable; that it has been tested and is certified for color, wear and cleanability...and this assurance has been constantly advertised both to consumer and the trade for years.


A Satisfied Customer writes:
"Those Tuff-Special Fancies are wonders. They have reduced my stripping waste so greatly that the superintendent asked me to explain the 33⅓% difference this year under last year. I could and did give entire credit to your Fancies!"
TUFF SPECIAL

A NEW FOUNDATION - that is absolutely uniform to take the place of leather in Fancies and Hand Cards

WE have always pointed with pride to our Fancies, years having been spent in producing a particular type of leather to accomplish certain and necessary results. Yet in the finest of leather there is chance for variation in tensile strength, in "stretch," in pliability, and in uniformity; laps or joints could not be avoided. Neither could the effect of oil which caused it to over-stretch.

We are proud of the record of TUFF-SPECIAL, for all these faults are completely eliminated as a result of constant research work. This new product is wholly owned and controlled by Howard Bros. So we are able to offer you a perfect foundation for thickness, uniformity, absolutely oil- and water-proof, without hard and soft spots, and completely free from laps or joints — a combination that means perfection in a Fancy.

All the above is being demonstrated in hundreds of mills which are now sending repeat orders. *You, too, should have the same advantage!*

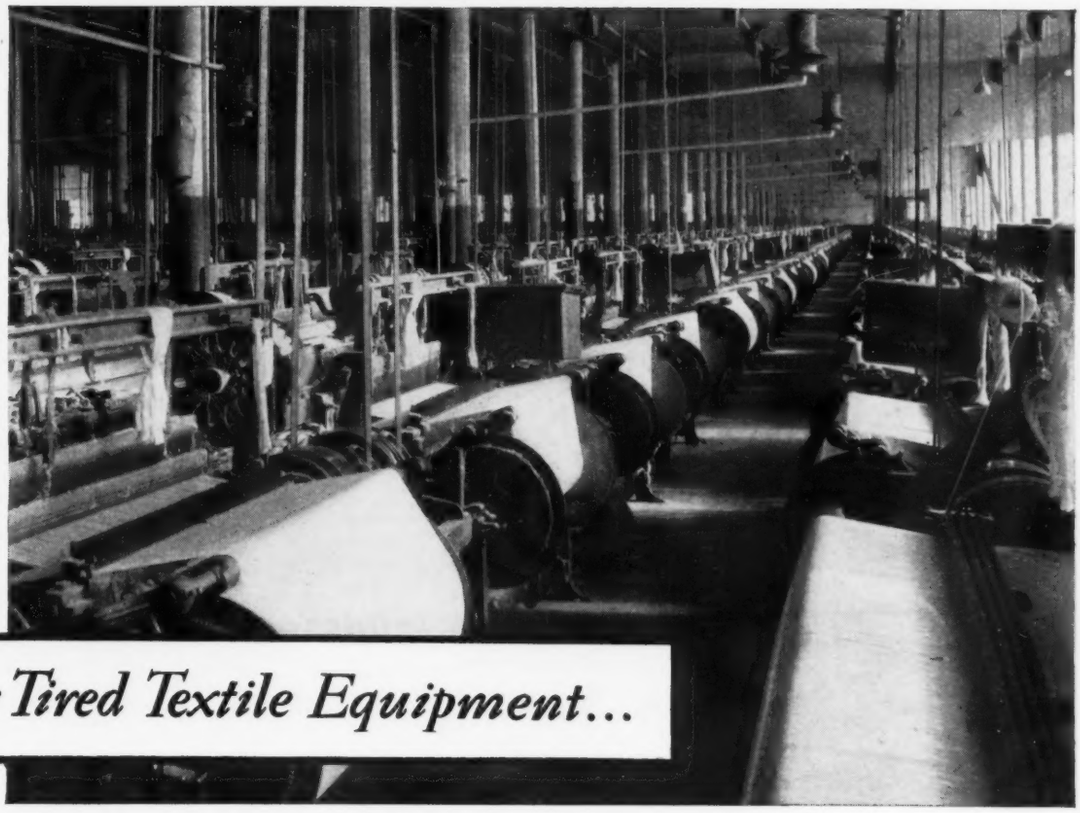
HOWARD BROS. MFG. CO.

WORCESTER, MASS.

Southern Plants: Atlanta, Ga., Gastonia, N.C. **Branch Offices:** Philadelphia, Dallas
Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

CARD CLOTHING is essential for DEFENSE
The wool of 10 sheep must be carded to outfit each soldier!

PRODUCTS: *Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants • Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted-Eye and Regular Wire Heddles.*



Tip for Tired Textile Equipment...

OVERWORKED MILLS TURN TO CITIES SERVICE LUBRICANTS!

The day-and-night humming of your hard-pressed machines is a constant reminder that every precaution should be taken to insure their smooth, ceaseless operation.

With the demands of wartime production, many mills are turning to Cities Service for quality textile lubricants. Lubricants of proved performance—developed and precisioned for every machine and every moving part in the textile industry.

This week, discuss your lubrication problem with a Cities Service Lubrication Engineer. Let this expert show you how Cities Service lubricants can take the strain off your overworked machines—and provide efficient, steady performance that spells peak production and dollars-and-cents savings.

No obligation, of course. Just phone or write your nearest Cities Service office—today.

OIL IS AMMUNITION—USE IT WISELY!

CITIES SERVICE OILS
ONCE-ALWAYS

Write to —
CITIES SERVICE OIL COMPANY
Room 1326, Sixty Wall Tower, N. Y.
or any of the following offices:
CHICAGO · CLEVELAND · ST. PAUL
KANSAS CITY · BOSTON · TORONTO
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ARKANSAS FUEL OIL COMPANY
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CITIES SERVICE TEXTILE LUBRICANTS

Include Glade Oils and Trojan Greases for:

Looms	Calender Rolls
Knitting Machines	Printing Machines
Beamers	Spinning Machines
Twisting Machines	Spoolers
Warpers	Winders, etc.

A LUBRICANT FOR EVERY INDUSTRIAL NEED

Are You Overlooking Some Easy-to-Cut Costs?

Conserve Time, Materials and Space with the Aid of these Free H&D Booklets.

"How To Seal" and "How To Stack And Load," are two of H & D's Little Packaging Library booklets, prepared to help manufacturers plan more effective, more economical packaging. They show you how sealing, storing and stacking of corrugated shipping boxes can be made more efficient, how time in the shipping department can be made more productive, how sealing materials can be "stretched," how space can be more completely utilized.

For more tangible service, the facilities of H & D's Package Laboratory are available to all manufacturers seeking help in redesigning present packaging, preparing packages for tomorrow's competitive merchandising.

Like the counsel of H & D Package Engineers, these Little Packaging Library booklets are yours without obligation. Write for the copies you need. Be sure each man in your shipping and traffic departments has an opportunity to study the information they contain. It will help you save money today and tomorrow.

REG. U. S. PAT. OFF.
H&D

HINDE & DAUCH *Authority on Packaging*

4230 DECATUR STREET, SANDUSKY, OHIO

FACTORIES IN BALTIMORE • BOSTON • BUFFALO • CHICAGO • CLEVELAND
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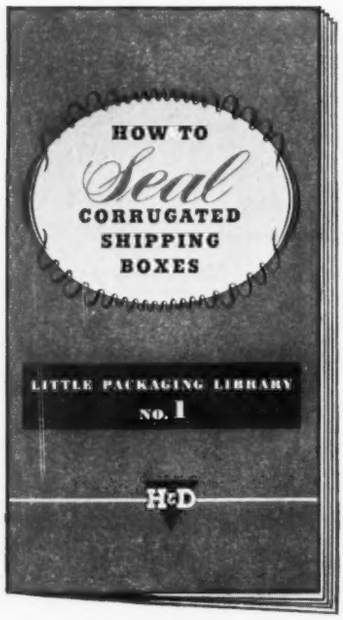
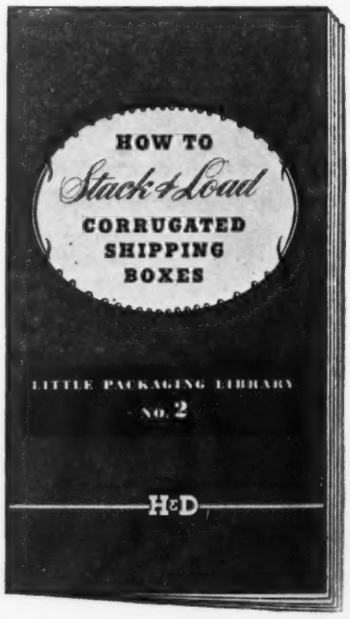


Facts about the four most commonly used sealing methods, and how they are especially effective on certain types of shipping boxes, are outlined in this book.



Eight rules for efficient stacking and loading are presented concisely in "How To Stack And Load." Write for your free copy.

Select the STAINLESS STEEL Best for Your Job

. . . and Save Vital Materials, Time and Money . . .

All stainless steels are not alike. There are many different commercial analyses, and each analysis differs in physical properties. This variation in properties makes it important that you select a steel in light of the job it has to do. By careful selection of the proper stainless steel for your war-production job you can help conserve stainless steels and the metals used in making them . . . chromium, nickel, manganese, tungsten, columbium, and titanium. You will also save time and money.

Stainless steels are used throughout industry because of their superior resistance to corrosion and oxidation and their remarkable strength-weight ratio. Typical applications in essential industries are shown at the right.

We have more than 35 years' experience in the production, fabrication, and use of stainless steels. Although we do not make steel, we produce the "Electromet" ferro-alloys and metals used in making steels. Therefore, we are in a position to give impartial advice on selecting the steel best suited for your needs. If you have a problem involving the physical or metallurgical properties of stainless steel, call upon us. There is no obligation.

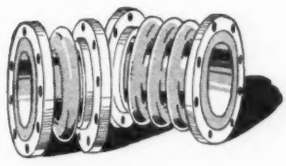
ELECTRO METALLURGICAL COMPANY

Unit of Union Carbide and Carbon Corporation

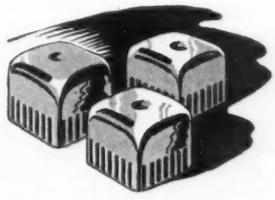
30 East 42nd Street UCC New York, N. Y.

In Canada, Electro Metallurgical Company of Canada, Limited, Welland, Ontario.

Electromet
Trade Mark
Ferro-Alloys & Metals

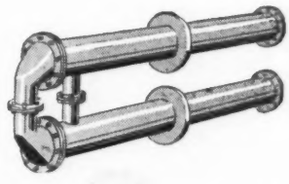


Expansion joints made of 18-8 stainless steel withstand corrosion in oil refinery piping.

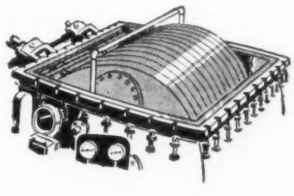


Bubble caps deep-drawn from 14 per cent chromium steel sheet are used in fractionating towers.

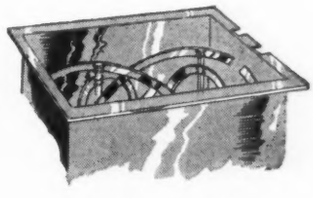
Aircraft engine collector rings of stainless steel stabilized with columbium, contain 1 to 2 per cent manganese.



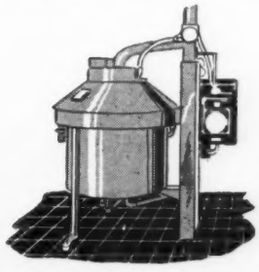
Heat exchanger of 18-8 molybdenum stainless steel resists hot organic acids under severe service conditions.



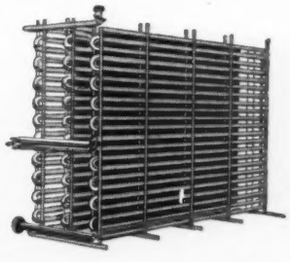
Stainless steel (18-8) drum and lining of this vacuum filter help keep products clean and pure.



Kneader made of 18-8 stainless steel is used in the manufacture of synthetic resins.



Irradiator used for increasing the active Vitamin D content of milk is made of 18-8 stainless steel.



Nitric acid cooler of 18 per cent chromium steel resists corrosive chemical action.

RAYON AND NYLON FOR PARACHUTES AND AIRPLANE TIRES PROCESSED ON **JOHNSON EQUIPMENT**

High tenacity rayon for parachute cloth and shrouds is sized on Johnson Sizers.

●

Nylon warps for parachutes weave better, without tight and loose ends when sized on Johnson Sizers.

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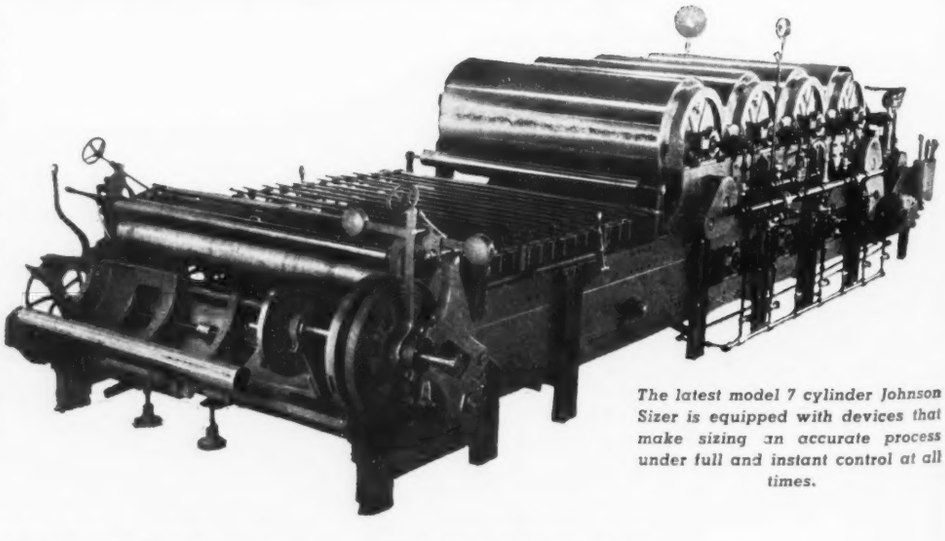
Rayon cords for airplane and other tires are also treated on Johnson Equipment.



The latest model 7 cylinder Johnson Sizer is equipped with devices that make sizing an accurate process under full and instant control at all times.

CHARLES B. JOHNSON
MACHINE WORKS

PIERCY & HOLSMAN STS. PATERSON, NEW JERSEY

WHAT FIBRE ?

You can't tell by the Hand of the goods...

...nor the burning test

But you can get the answer *quick*—with

COLOTEX B

THE UNIVERSAL TEXTILE INDICATOR

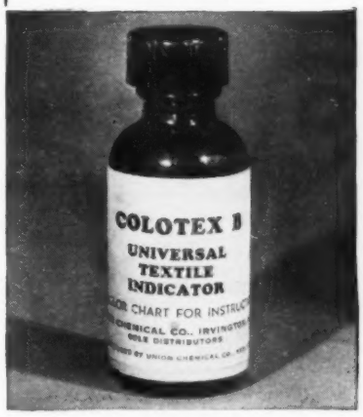
FOR NATURAL AND ALL SYNTHETIC FIBRES

This is an ALL-AMERICAN product, always in stock, readily obtainable. Simply immerse bleached fibres in Colotex B liquid, rinse and dry, and compare the shade with the Color Chart supplied with the Indicator. Specific and positive color reaction is given in one immersion, identifying ANY textile fibre, including NYLON, ARALAC and VINYON, whether in the form of single or mixed fibres. COLOTEX B can be used again and again until exhausted.

Sold in 1 oz. and 4 oz. Bottles.

JUST DIP IT . . . DRY IT . . .
THE COLOR IS THE ANSWER

Send for
1 oz. *test bottle*
Price 2.00



McCABE CHEMICAL CO...

Manufacturing Chemists

IRVINGTON, NEW JERSEY

We invite your attention to our other products for the textile industry: MIRACLE WHITE PIGMENT (for discharge printing) • TEXTILE FINISHES • • SCOURING AIDS • BOIL-OFF COMPOUNDS • GOVERNMENT SPECIFICATION FINISHES T-1212, CCC-D-746, EBP—170B.

"Gramp" YAEGER'S BACK ON THE JOB!

"Gramp" Yaeger's typical of the thousands of skilled old-timers in industry able to continue doing *precision* work . . . if you give them the kind of man-made daylight provided by MILLER *Continuous* Wireway Fluorescent Lighting System . . .

WPB says, "When old-timers are provided with good lighting, tailored to their needs, it is frequently possible for them to keep on doing the precision work for which they are fitted."

MILLER 50 FOOT CANDLER or 100 FOOT CANDLER will provide your plant with fine, man-made *daylight* . . . adequate, productive illumination evenly distributed over every working surface. MILLER TROFFERS will duplicate that performance in your plant offices and drafting room.

Better lighting will actually make your workers see better, feel better, work better. It will help speed production, cut down spoilage, improve worker morale, reduce accidents, and give you a smoother-running plant. It is constructed to effect savings in critical materials . . . in installation time and dollars . . . and in power consumption.

Just under 100 years of lighting experience . . . working with incandescent, fluorescent and mercury vapor . . . has enabled MILLER to offer through its engineers a lighting "expertness" which is at your command . . . to provide the best type of lighting system for your business. *Write or wire us today* and we'll get on the job at once.

BUY U. S. WAR BONDS

MILLER

50 FOOT CANDLER
100 FOOT CANDLER
MILLER TROFFERS
Continuous Wireway Fluorescent Lighting Systems

THE MILLER COMPANY
MERIDEN, CONN.
Pioneers in Good Lighting Since 1844

• MILLER offers a complete line of filament and fluorescent lighting equipment.

A MILLER Message inspired by WPB's helpful handbook, "Plant Efficiency."

A REPUTATION IS A LIVING THING

Quality is a matter of refinements steadily bred into a product and sensitively cultivated.
General's policy is guided by faithful adherence to fundamentals through fluctuating conditions.
Ours is an attitude of perennial responsibility toward all those who deal with us.
This is how a business becomes planted deeper and deeper in its field of operations.
This is how our business grows and flourishes and its symbol becomes synonymous with Quality.

GENERAL DYESTUFF CORPORATION · NEW YORK

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

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For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

DAYCO TEMPERED ROLL COVERINGS
PIONEERED, ENGINEERED AND PROVED BY ACTUAL MILL SERVICE

1. Improved drafting.
2. No grooving—less ends down.
3. Unaffected by temperature changes.
4. Lower net roll costs.
5. Long service life.
6. Easy to apply.
7. Proper cushioning.
8. Not affected by hard ends.
9. Static free.
10. Oil resisting.
11. One-piece tubular construction.
12. Produce more uniform yarn.

WELL PREPARED was the Quartermaster's Corps to clothe America's fighting forces better than any Army in history.

Well prepared, too, were our Textile Industries to supply millions upon millions of yards of cloth and fabrics which pass the Quartermaster's tests for everything from strength of thread to wear, wind, water, cold and sun resistance.

Well prepared, also, were Dayco Tempered Roll Coverings to set entirely new standards for delivering month-after-month, record-breaking performance in the production of more uniform, high-standard yarn. Daycos are engineered and built to take in stride sudden or extreme temperature changes without flattening, distorting or grooving.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO

HOME PLANT, TEXTILE PRODUCTS DIVISION
WAYNESVILLE, NORTH CAROLINA

The Originators and Pioneers of Dayco Tempered Roll Coverings

MAIN SALES OFFICE
Woodside Building . . . Greenville, S. C.

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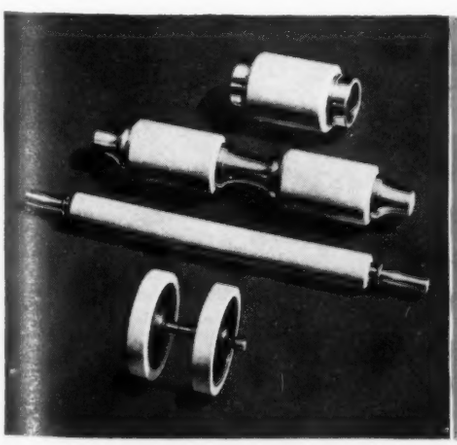
DAYTON RUBBER EXPORT CORPORATION
38 Pearl Street New York, N. Y. U. S. A.

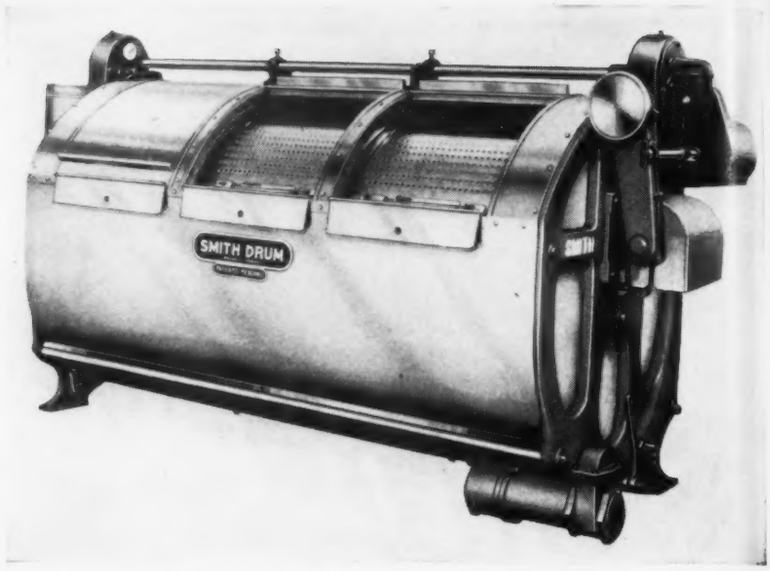
THROW YOUR SCRAP INTO THE FIGHT!



Dayton
***Thorobred* TEXTILE PRODUCTS**
Dayco (TEMPERED) **ROLL COVERINGS—LOOM SUPPLIES**
MADE BY THE WORLD'S LARGEST MANUFACTURER OF V-BELTS

Copyright 1942, The Dayton Rubber Manufacturing Company

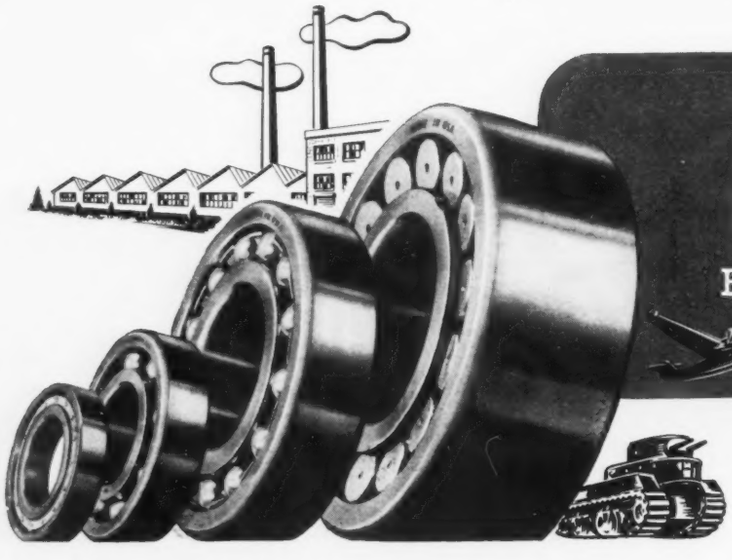
For Color In Milady's Stockings



BUILT BY SMITH, DRUM & CO.

Here's a machine that's responsible for the beautiful shades and tints of hosiery that milady wears today. It's the Type 12-RD Rotary Hosiery Dyeing Machine that puts the job of keeping shafts in perfect alignment up to SKF Bearings. And it's a job well done because SKF's have the ability to take radial and thrust loads in either direction the day around the year around, to run for long periods without lubrication, to maintain factory settings indefinitely. Wherever a bearing has an important job to do on a textile machine, you'll usually find an SKF doing it. 5158

SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA.



SKF
BALL AND ROLLER BEARINGS

YOU CAN PUT THOSE NEW MACHINES RIGHT TOWORK. ALLWE DO IS TAKE OUT THIS 100-AMP BREAKER AND PLUG IN A 225. THE CABLES ARE OK
I GUESS YOU WEREN'T KID-DING WHEN YOU SAID YOU'D TAKE CARE OF THE POWER IN THREE MINUTES

Keep Up with Shifting Loads with This New Removable Breaker

WHEN plant loads grow rapidly and shift quickly—as they do today—your breaker capacity must keep in step. If it lags behind, shutdowns and loss of valuable production time soon catch up with you! That's another reason why we built this *removable* breaker, which permits interchanging different-rated breaker units—in *less than three minutes*—to meet new load conditions.

This new breaker is equally easy to install, operate, and inspect. Because of its unique flexibility and its ability to quickly restore service after protective interruptions, it saves valuable minutes of production time daily. It protects against the damage and prolonged delays often caused when less adequate protective devices are subjected to severe short-circuits.

Install these new AE-1 breakers in your lighting, power, and motor circuits—up to 600 volts. A new booklet (GEA-3600) tells how and shows where to use them. For a copy, write the G-E office near you, or address General Electric Co., Schenectady, New York.

THE BREAKER WITH THE DISCONNECT FEATURE

GENERAL ELECTRIC

860-225-7580

The True Meaning and Value of a TRADE MARK *to You*

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Quality
LOOM HARNESS and SHUTTLE EQUIPMENT
made exclusively by
STEEL HEDDLE MFG. CO.
REG. TRADE MARK.

Guarantees Perfection—
Dependability—
Accuracy—

Service—
Satisfaction—
Superiority—

You may depend on the recommendation of our Field Engineer as to the loom harness unit most suitable to the fabric to be woven.

STEEL HEDDLE MFG. CO.

BRANCH OFFICES ALL OVER THE WORLD

Manufacturers of Superior
FLAT STEEL HEDDLES—HARNESS FRAMES—ALL TYPES OF LOOM REEDS—
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FIELD ENGINEERS IN EVERY DISTRICT

Now THEY come first later on you will

In this period, the needs for the armed forces come first, because our first task is to win the war. An increasing proportion of Standard-Coosa-Thatcher's output is going to war, which leaves less for the civilian consumers. This meets with everyone's approval.

On the day when peace dawns and the pent-up needs of those at home can be filled, the same uniform high quality yarns which are Standard's tradition will flow back into normal channels.

Meanwhile let us all work harder, buy more bonds and collect and deliver scrap.

STANDARD DURENE • SELO • PREEMO • COMBED SAKS • THREADS • COMBED PEELERS •

This Garment Made Of
Durene
(2 Ply Mercerized Combed Cotton)
Absorbs and evaporates perspiration twice as fast as garments made of ordinary cotton yarn*... EXTRA comfort, health protection and cleanliness.
*Tests by U.S. Testing Co.

STANDARD-COOSA-THATCHER CO.

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SPINNERS MANUFACTURERS DYERS S-C-T

In the high-speed drive for Victory, FRICTION finds its greatest opportunity. Machine operators have rest intervals, but the machines themselves have none. And so, normal inspections and adjustments may be overlooked—lubrication may be neglected—a bearing becomes dry or dirty, and over-heated—FRICTION'S agents get in their deadly work—and A DAMAGED, BURNED-OUT OR RUINED BEARING CRIPPLES A VITAL TOOL.

Let NORMA-HOFFMANN engineers help you guard your bearings against FRICTION'S "saboteurs"—dust, dirt, grit, moisture, poor lubricants, inadequate lubrication. Give each bearing periodic inspections—watch for unusual noise or heat—keep your bearings clean—use the lubricant best adapted to the duty involved. If possible, have replacement bearings at hand. * * * Our engineers are at your service, with 30-odd years of specialized experience in bearing application, operation and maintenance.

NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN. . . . FOUNDED 1911

Hard-working Mazlo Magnesium textile equipment appreciates a little attention

Textile operations move faster, more smoothly, because of the many lightweight Magnesium Alloy machine parts and equipment employed. You can't get replacements — fighting men are taking all of these lightweight products we can produce — so ways and means of making present equipment last longer become tremendously important.

Protect the surface of Magnesium Alloy parts and they're certain to have longer life. These four publications tell you how to provide that protection. Use the coupon below to request copies.

ALUMINUM COMPANY OF AMERICA
(Sales Agent for Mazlo Magnesium Products)
1705 Gulf Building, Pittsburgh, Pa.
Send me—

- ☐ Magnesium Surface Protection
- ☐ Properties of Mazlo Magnesium Products
- ☐ Service Instructions for Mazlo Magnesium Warp Beams
- ☐ Data Book: "Mazlo Magnesium Alloys"

Signed_____ Title_____

Company_____

Address_____

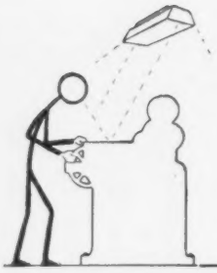
MAZLO

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

WANT TO STEP UP NIGHT PRODUCTION IN YOUR FACTORY ?

THESE TRUE STORIES TELL HOW OTHER WAR PLANTS HAVE INCREASED PRODUCTION BY MAKING A FEW SIMPLE CHANGES IN THEIR LIGHTING!



Production lagged in a small war factory because inspection work was lagging. Yet new lighting fixtures only recently had been installed. A lighting engineer discovered that glare was the trouble . . . glare from perfectly good lighting fixtures that were so placed that the light hit the inspectors right in their eyes. A simple change in the position of the fixtures opened up that bottleneck and helped increase production immediately.

Something was wrong with the lighting in a big war plant recently converted to the manufacture of army tanks. A lighting man was called in. He made a careful study . . . taking light meter readings here and there . . . and examining the lighting fixtures. Then he cleaned all the bulbs and reflectors in one small section of the plant. Another light meter reading showed the light had jumped from 6 to 25 footcandles. Lighting had been increased four times—just by getting rid of dirt and grease. Today with a regular cleaning program throughout the plant, production has increased.

A small plant recently got an order to manufacture a vital part for machine guns, requiring about 20 milling machine operations. With only a limited number of machines frequent machine settings were required. The plant engineer knew the job could be done faster if his workmen had better light. He installed supplementary lighting over the machines and put larger bulbs in the sockets. Results? The job was done faster and more efficiently, and so the production capacity of the plant was increased.

IF YOU ARE RUNNING a wartime shop or factory, why not find out whether good lighting can improve production, cut waste and accidents for you? Even a slight change to eliminate glare or shadows can often make a noticeable difference in night production. Your local electric service company or your G-E lamp supplier can give you helpful advice. Or call your nearest G-E lamp office and they will place a trained Wartime Lighting Counsellor at your service. General Electric Company, Nela Park, Cleveland, Ohio.

G-E MAZDA LAMPS

GENERAL ELECTRIC

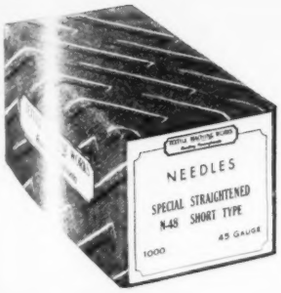
TEAR OUT THIS COUPON TODAY!

General Electric Co., Dept. 166-T-11, Nela Park, Cleveland, O.— Send for new free book, "War Production Lighting" and further information on how light can help increase night shift production.

Name .....

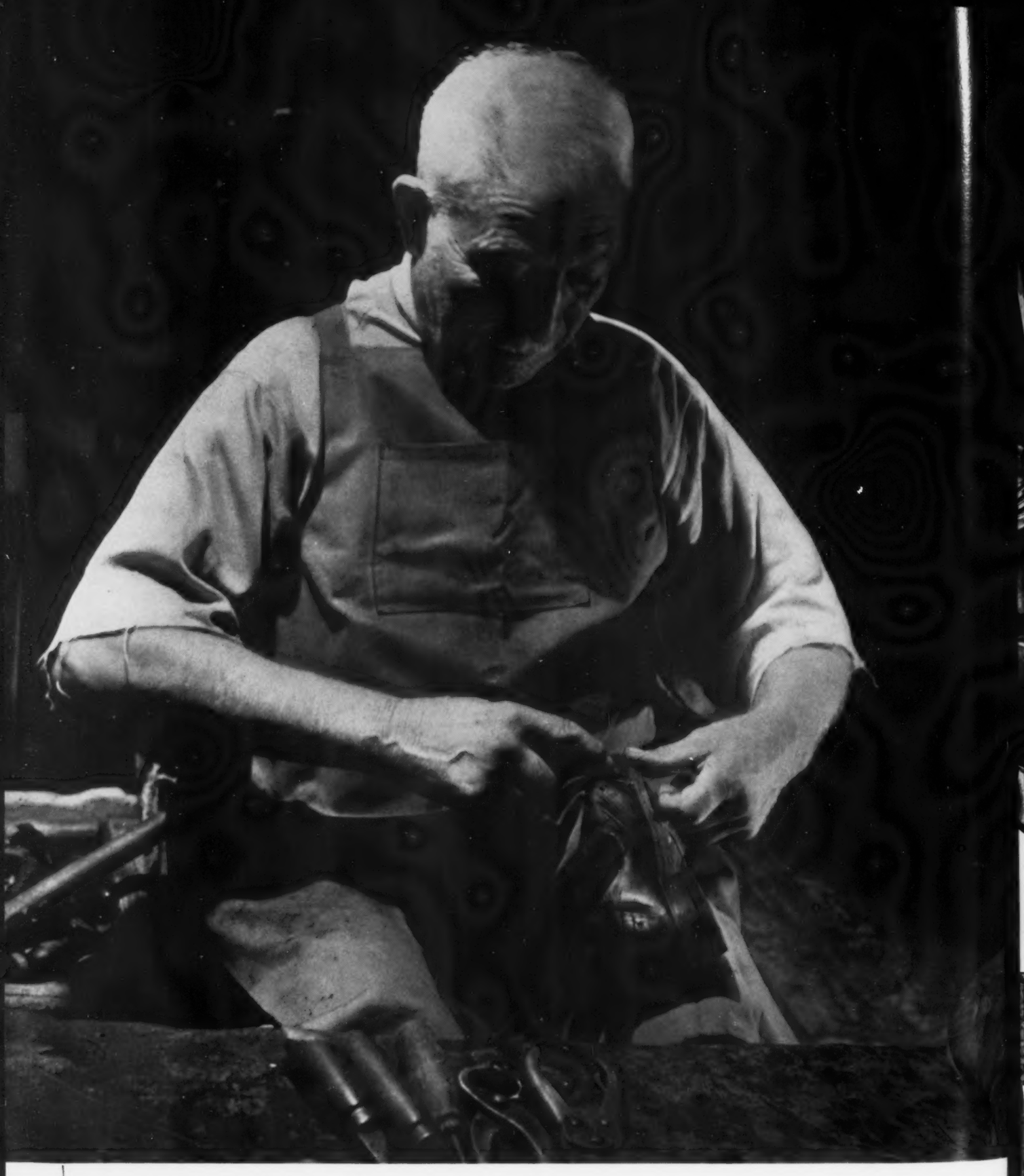
Company .....

Address .....



Fine Feathers . . . Every woman knows that it takes the finest of hosiery fabrics to complement her most breath-taking costume. Every hosiery manufacturer knows that — regardless of the fibre used — only the best of needles will produce this perfect fabric. Keep your knitting machines young and effective with TMW Needles. *. . . And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

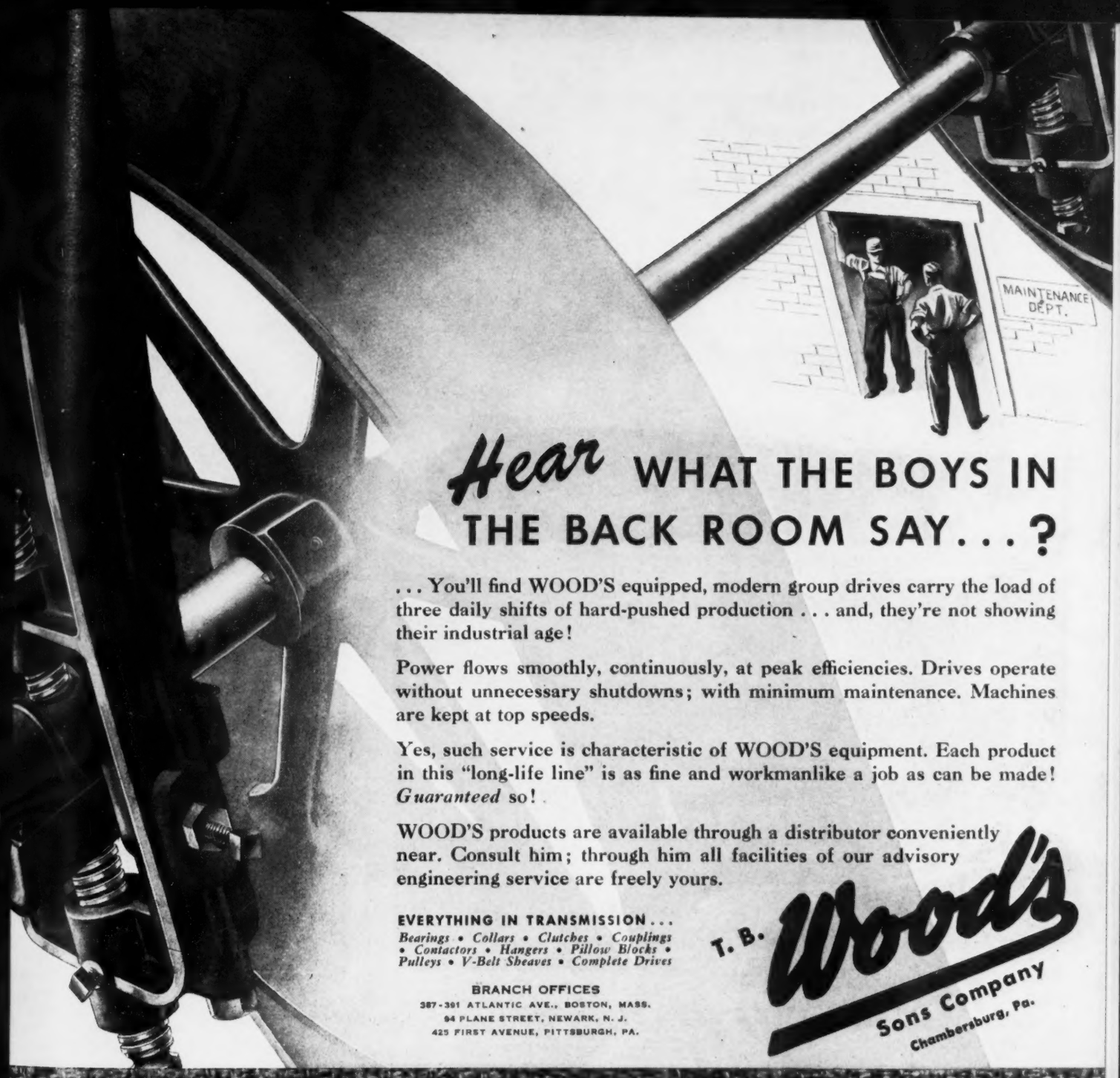


U. S. Navy "E"—awarded Textile Machine Works July 25, 1941, for outstanding production of Naval Ordnance. The white star is evidence of continuing superior performance.

"Nine-tenths of wisdom is being wise in time."
THEO. ROOSEVELT

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at the point of highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.



Hear WHAT THE BOYS IN THE BACK ROOM SAY...?

... You'll find WOOD'S equipped, modern group drives carry the load of three daily shifts of hard-pushed production . . . and, they're not showing their industrial age!

Power flows smoothly, continuously, at peak efficiencies. Drives operate without unnecessary shutdowns; with minimum maintenance. Machines are kept at top speeds.

Yes, such service is characteristic of WOOD'S equipment. Each product in this "long-life line" is as fine and workmanlike a job as can be made! *Guaranteed* so!

WOOD'S products are available through a distributor conveniently near. Consult him; through him all facilities of our advisory engineering service are freely yours.

EVERYTHING IN TRANSMISSION...
Bearings • Collars • Clutches • Couplings • Contactors • Hangers • Pillow Blocks • Pulleys • V-Belt Sheaves • Complete Drives

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94 PLANE STREET, NEWARK, N. J.
425 FIRST AVENUE, PITTSBURGH, PA.

T. B. Wood's Sons Company
Chambersburg, Pa.

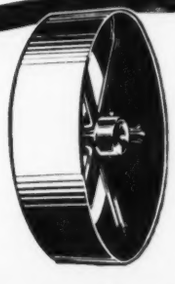
THE BULLETIN BOARD

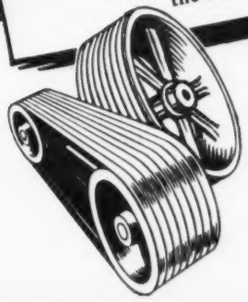
Machinery builders who are now making their own pulleys, pillow blocks, sheaves, bearings and other similar parts can release men and machines for other vital production by letting Wood's handle this part of the problem.

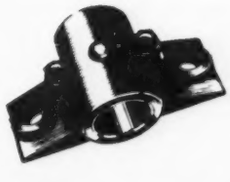
WOOD'S PLANNED POWER TRANSMISSION

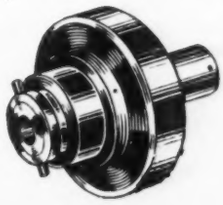
LOWERS CONNECTED LOAD
Proper grouping of production machines reduces the load factor and connected horsepower.

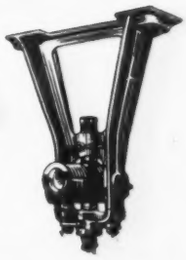
Invest for VICTORY
Buy
U.S. WAR BONDS











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is ALCHLOR PROCESSED—your assurance

that it provides better spindle lubrication

Gulf's Alchlor Process is the most effective method known for removing impurities and unstable hydrocarbons from oil

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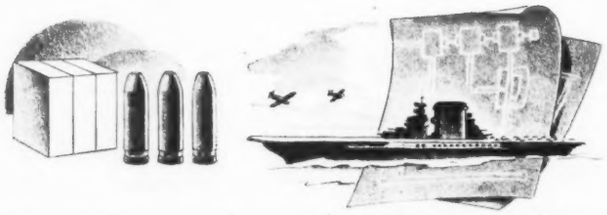
Nineteen thirty-nine! That was the year Hitler started on his romp through Europe. And that was the year Mathieson introduced *synthetic salt cake* to the kraft paper industry. October, to be exact. At that time shipments of ordinary salt cake from Europe, which had supplied about half the salt cake required for our kraft pulping operations, were cut off by the war. Except for the timely intervention of Mathieson Synthetic Salt Cake, which has since proved itself superior to ordinary salt cake, there might have been a serious dislocation in the kraft paper industry.

How serious the threatened dislocation might have been, no one knows. But the gravity of the situation has been high-lighted by subsequent reports on the importance of paper and pulp products in the war effort. "So vital is paper in waging war," an authoritative source states, "it is estimated that the present struggle would be forced to stop within 60 days if the supply of pulp and its many products were cut off."



Among those products are 60,000 tons of kraft paper, required to interleave armor plate and cold rolled steel . . . 30,000 tons of kraft to package shells and high explosives . . . and an entire carload of blueprint paper to design one modern aircraft carrier! All this in addition to thousands of tons of paper required for other wartime purposes—notably to package the "tools" of war and to record its innumerable decisions and directives, at home and in the field.

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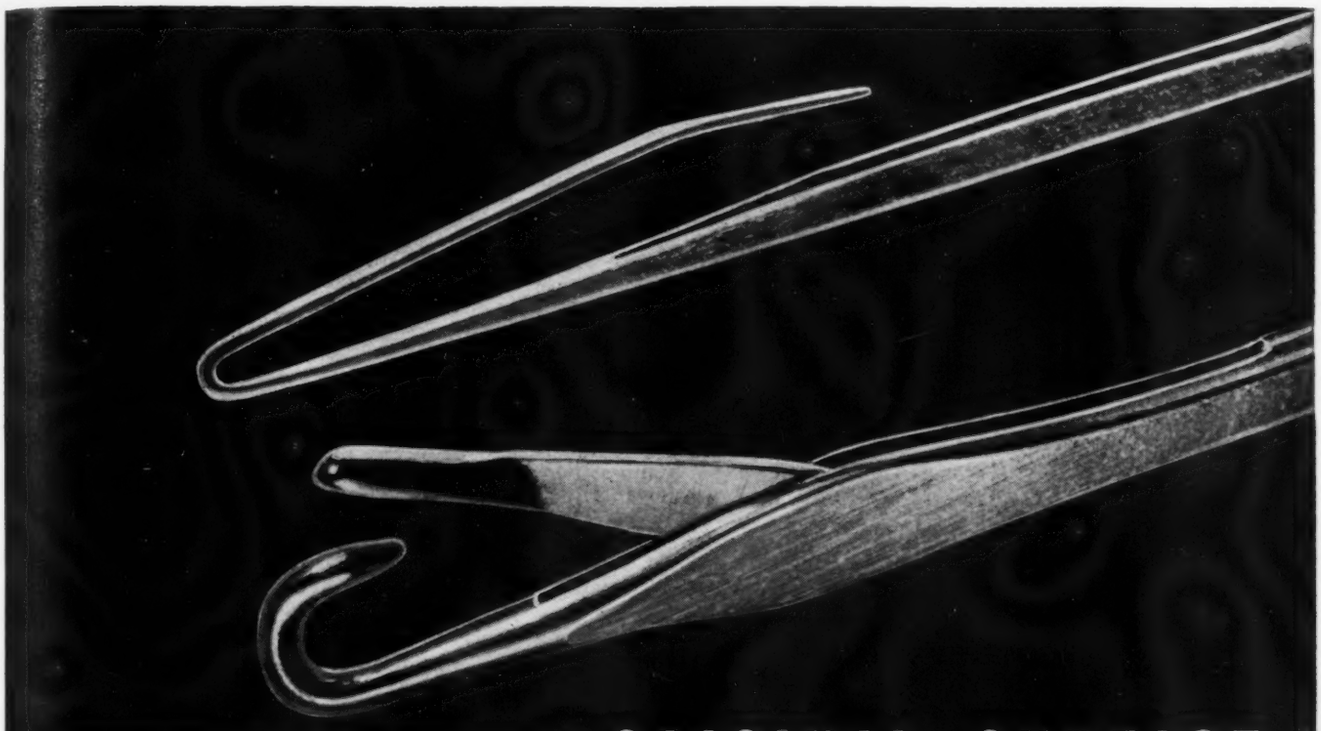
SEVERAL IMPORTANT new technical developments will be featured in articles scheduled for our December issue. Among the developments which will be discussed are: (1) Saran, a monofilament synthetic yarn which is coming into extensive use for production of fabrics for military and civilian purposes; (2) drying with infra-red lamps; (3) large-package twisting; (4) cushion starter for woolen cards; (5) improved techniques for detection of fiber damage; and (6) progress in utilization of surface-active chemicals. Other timely subjects which will be discussed include: woolen and worsted fabrics for 1943; keeping a finished-goods inventory record; preventing defects in rayon fabrics; and maintenance of water treatment equipment.

AND IN JUNE, 1943—TEXTILE WORLD's 75TH ANNIVERSARY NUMBER



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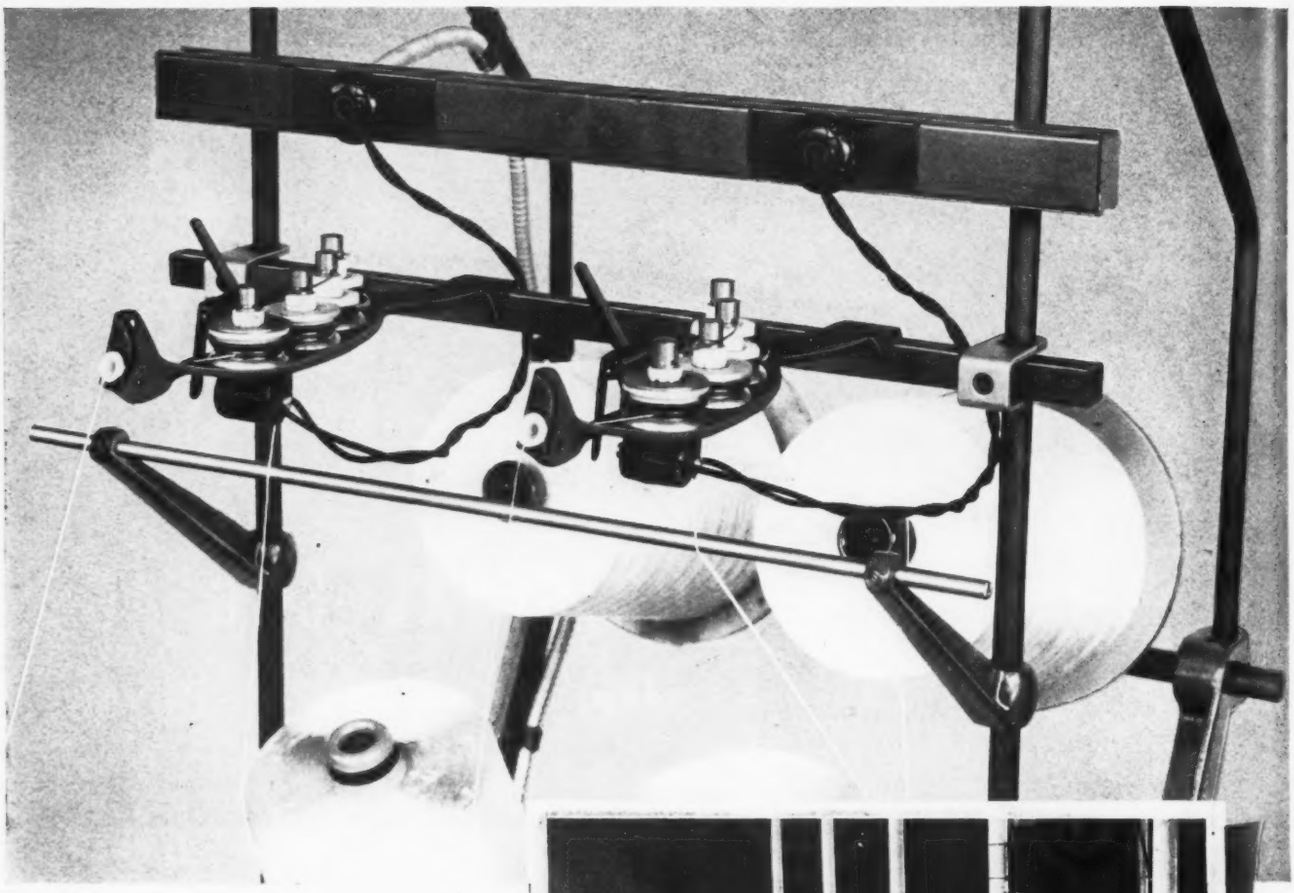
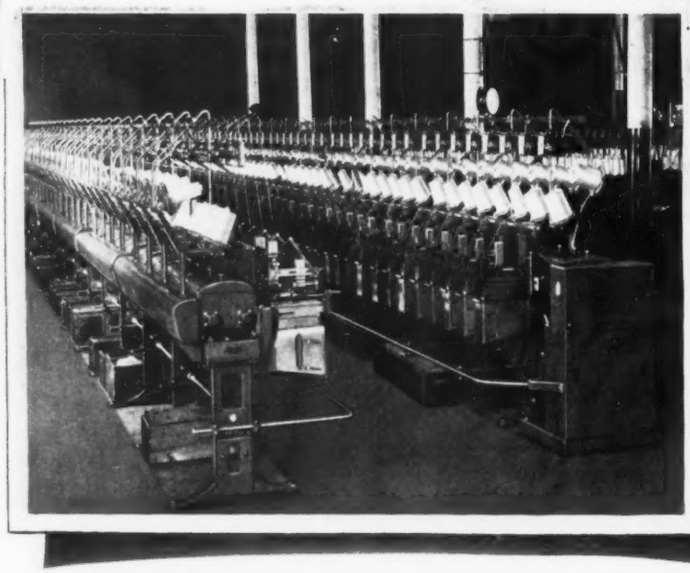
TUNE IN FRED ALLEN EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

YARN QUALITY PROTECTED AT HIGH WINDING SPEED





SOME rayon weaving mills prefer the Multiple Disc Tension for producing filling bobbins rather than the finger-type tension. For such mills, Universal Engineers have designed a Multiple Disc Tension for use on the Universal Automatic No. 99 Bobbin Winder.

At the start of each new bobbin the yarn is relieved of any severe strain by means of an automatic release of tension.

Three of the four tension discs are raised from the yarn for just an instant as winding begins. During the brief period when the yarn is being brought up to high speed, only a light tension is applied by the remaining single disc.

Then the tension from the other three discs is added, and winding continues with the yarn under normal tension.

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HIGH SPEED BOBBIN WINDER

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UNIVERSAL WINDING COMPANY

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Construction—Builder of Bases

America's Great Peacetime Industry Goes to War

PUNCHED through 1,600 miles of trackless wilderness and rivaling the Panama Canal in strategic importance, the Alaska Highway will cut days and dangers from present supply routes . . . to Alaska . . . to the Aleutians . . . yes, to Japan itself!

This job, to be finished soon and well ahead of schedule, is but one example in thousands illustrating how construction sets the stage for our war effort . . . and why the construction engineer is vital to victory.

Back of America's busy production lines, expanding shipyards, growing cantonments and far-flung military bases is a series of swiftly executed construction jobs. Important jobs! *For the construction industry is a builder of bases. Bases for production—for training—for defense—and for attack.*

To conceive and to carry through so tremendous a program in a race against time is typically American. It requires enterprise and the sort of versatility that has been acquired by undertaking every kind of job; from a Boulder dam to a drydock, from a Pennsylvania Turnpike to a housing project, from a Radio City to a railroad tunnel . . . and taking it in stride. War's demands in the eyes of America's construction men, are simply more of the same—for a grimmer purpose, and under heavier pressure.

The civil engineers who develop the necessary designs, the contractors who execute them and the manufacturers who provide the equipment and materials, are as much a part of this war as are the men who face the enemy. The results of their labors are recorded in mounting production figures, and will be indelibly written in the military annals of this war. Those 60,000 airplanes, 45,000 tanks and 8,000,000 tons of shipping that the President asked for in 1942 will be supplied because—and only because—the construction industry did a Herculean plant-building job first—and fast.

This is the fifth of a series of editorials appearing monthly in all McGraw-Hill publications, reaching more than one and one-half million readers, and in daily newspapers in New York, Chicago and Washington, D. C. They are dedicated to the purpose of telling the part that each industry is playing in the war effort and of informing the public on the magnificent war-production accomplishments of America's industries.

Yes, construction, America's great peacetime industry, has gone all out for war. From a normal 6½ billion dollars in 1938, it got into its war stride last year with a 11½ billion dollar volume. And under the impetus of Pearl Harbor, the 1942 figure now promises to reach the unprecedented total of 15 billion dollars. "If buildings would win the war, Hitler would be licked now", said Lieut. Gen. William S. Knudsen recently. Which emphasizes the further fact that the construction industry was the *first* to go to war.

The technical and managerial talent that is accomplishing this mammoth job has had to find its strength and resources within itself. No possibility of "conversion" here! Only years of varied construction experience enabled it to tackle and to achieve the manifold tasks that building for war demands.

Take that cornfield, for instance, that Henry Ford picked for his record-breaking bomber plant. The spring mud was soft and deep when contractors moved in last year. They were entering a race against an almost impossible time limit. Before they could even begin on the plant itself, they had to build roads, lay a 4-mile water supply line and install a complete sewerage system with its disposal plant. But such varied jobs—each big in its own right—merely were antecedent to running up the framework and enclosure for the 60-acre factory itself. Or to using road-building methods to pave a floor that was the equivalent of 25 miles of 20-foot wide concrete highway.

It was a race against the approaching winter, and to win it they had to push their $1,000,000 worth of construction equipment to the limit—day and night. But win they did! It is accomplishments like these that explain how the nation's aviation factory floor space jumped from 18,000,000 to 60,000,000 square feet in

the past two years . . . why Fortresses and fighter ships are beginning to turn the scales of war in our favor.

"Somewhere in the Southwest" the Army called for a training base. The contractor who answered that call summed up his performance in characteristic fashion: "Beginning without so much as a contour map we had a $10,000,000 project ready for operation within 90 calendar days, and saved 3½ million dollars of the estimated cost".

At another Army camp a contractor assembled a crew of 20,000 men who put together 1,400 buildings in 125 working days, along with a sewer system, a water-supply and a street layout of which many a fair-sized city might be proud. This job swallowed up 2,000 carloads of lumber, and 26,000 kegs of nails. So perfect was the teamwork, from the general manager down through the hundreds of superintendents and foremen to the specialized crews, that as many as seventy buildings were erected in one single day.

But versatility and experience are not the only qualities that the construction engineer has in his tool chest. He has ingenuity, and he needed it when steel, copper, zinc and aluminum had to be used for combat equipment, and were denied him. Great hangars, conventionally of structural steel, were turned out with record-breaking timber arch spans. Reinforced concrete factories were designed to require only 3 lb. of steel bars per square foot instead of the customary 5 lb. Asphalt-impregnated paper was substituted for copper in flashings, cement-asbestos for galvanized steel in duct work. In the face of a materials shortage, he continued to build bases—safely, economically, and on time.

Construction ingenuity, too, is back of the records in Liberty ships, in war housing and a host of other facilities. Indeed, it was the construction industry that stepped forward to assume the bulk of the emergency shipbuilding program, leaving established yards free to handle more specialized Navy work. Naturally, it was easy for civil engineers and contractors to build the shipyards, but building ships was another story. It is a far cry from steel ships to conventional engineering structures, yet, drawing upon their bridge and building experience, the men of construction have turned out ships faster than they were ever built before.

How was this possible? . . . because the construction man sees every job as a new problem, views every precedent as something to be discarded in favor of something better. So instead of assembling the myriad separate pieces of each ship on the ways, he fabricated them into huge built-up sections. These he swung to the ways and welded them into place in a fraction of the time required by old methods.

Again, the demands for wartime housing for workers in industrial areas, at Navy bases, and near Army concentrations, have altered the meaning of "residential construction". The building of individual houses has given way to a form of multiple-unit project that calls for the skilled services of the architect, the civil engineer and the large contracting organization. On one such project, for example, a contractor experienced in large building and bridge construction employed an extensive system of prefabrication and site assembly that made possible the completion of 5,000 houses for war workers within five months.

All these activities, within the United States, parallel the achievements of other industries that serve the men at the front. But construction knows no continental limits. Its men are serving throughout the network of defense bases built in the West Indies, Greenland, and Iceland, and in the offensive bases that are taking form in the jungles and deserts of Africa, the harbors of the Persian Gulf, and the plains and mountains of Australia and Alaska. Already in this war, as in the last one, construction crews, like those at Wake and Guam, have dropped their peacetime tools to fight shoulder to shoulder with their comrades in uniform. Construction follows the flag to the farthest outposts in this global struggle.

* * * *

But while the construction industry thus serves the special needs of the armed forces, it must look after its job at home. It must keep the highways serviceable, the water supply safe, sanitary facilities adequate. There are home chores that cannot be neglected even in war.

And when we finish our No. 1 task of winning the war, the construction industry will again be called upon to help re-establish peacetime employment and to stimulate the normal industrial activities of the nation. It will raze, redesign and rebuild; it will bring modern sanitation to urban dwellers; it will safeguard fertile areas and cities from disastrous floods; it will improve all forms of transportation; it will design and build the facilities that will be needed to reconvert from war to peace. Its vision, versatility, experience and ingenuity will be as indispensable then as they are vital now.

Today it is building the bases that are needed back of every battle-line. Tomorrow it will build for a new and better era. Today it is laying the foundation for the victories that must be ours. Tomorrow it will lay the foundation for the peace that will follow these victories. In war and in peace the construction industry is the builder, the harnesser of nature's forces.

President, McGraw-Hill Publishing Company, Inc.

TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

Our Secret Weapon: Our Greatest Asset

AT LONG LAST, America's secret weapon against the Axis is emerging. And it has been secret only because we kept it secret from ourselves. As a nation, we felt that we could out-build and out-buy any other country in the world, at a good net profit to capital and labor. Gradually, we were awakened: first, by way of successive defeats, and then by successive shortages in vital materials which made money an idle commodity. But the real shortage, which very few talked about, was the shortage of man-power. 130,000,000 people seemed non-exhaustible. However, as we gradually classified them, we found the supply was inadequate on every front. There just weren't enough men to fight and build and keep the home-fires burning. And so, today we are starting to nurse our man-power.

From the start, we had a wrong attitude toward the man-power problem. Probably it was a hang-over from the depression days when there was just too many mouths to feed and too many men who were out of jobs. We rated our progress by the decrease in the millions of unemployed. We forgot that each one of those millions was a human being, with aspirations and loved ones and personal needs, of both the body and the spirit.

We continued that mistake during the defense effort and the first months of the war. Almost always, it was somebody else's son who was called into service, or who was killed in an airplane accident, or who was lost at sea. The percentage was small enough to defy personal reckoning.

BUT THEN things started to happen. All of us—or nearly all of us—came to have sons or other near relatives called away from home. Casualty lists came closer to all. That was the real start of America's all-out war effort.

And it is only the beginning. From now on, our precious heritage of free human-beings will take its rightful place in the front rank of our war assets. Not because they are scarce, nor because they must be used as cannon-fodder—your boys and mine—but because our people have in their hearts the spark of freedom. That is the one asset the Axis powers lack. It is our secret weapon. Secret, as we said, from ourselves to date, but now secret to us no longer. But always secret to Hitler and Hirohito, who have no way of capturing that, their one missing asset: the asset without which this war cannot be won.

And so, as we gird up our loins now for final victory in 1943 or 1944, it is up to each of us to put this human-relations problem in the front rank of our thinking, just as it is in the front rank of our national war effort.

Those of us who have sons in the Services will do that automatically so far as they are concerned. But there is more to be done. Those of us who have men and women working with us in our various jobs must cherish that resource far more carefully than we watch out for our tires, or our metal, or any other of the scarce commodities.

We must recognize the fact that every person in our organization is an individual. We must consider his particular problem. We must make sure that those who come into direct contact with him share our regard for human freedom and individual expression. That, in the case of textile mills, means primarily the superintendent, the assistant superintendent, the overseers, the second hands, the section hands.

We must also have particular thought for that forgotten man, the white collar worker, who in every boom finds cost of living rising and salaries static.

We must also protect the interests of the over-age group of employees who are the first to lose their jobs in a depression, and the last to find them in a boom period. We must somehow try to assure them, right now, that they are not being picked up again because of shortage of man-power, merely to be thrown out when they are not needed. We must try to rearrange our organization set-ups so that there will continue to be work for all our associates, irrespective of age, who want and are able to work.

IF WE DON'T DO THAT, then some super-duper post-war WPA will do it for us. And that would be the beginning of the end of a free America, because our American system cannot withstand the type and size of Government subsidy which would be necessary after this war, if we—American industry—fall down on our job.

All of that is a big order. But it is not impossible. More than that, it is imperative. If we perform it, this war will not have been in vain. In fact it is already apparent that the only black ink we can expect from the war is a new appraisal of human values.

Our secret weapon in war-time—inspired man-power—should also prove to be our greatest asset in the peace that is to come.

THE EDITOR SAYS

Questionnaire for Manufacturers

1. Is your plant as completely on war work as it is humanly possible to put it?

2. Are you and your employees buying as many war-bonds each month as you possibly can, within the limits of paying expenses for bare living and for taxes?

3. Have you salvaged and turned in every bit of metal and rubber outside of that necessary to keep the plant moving?

4. Have you got a training-program which will draw in new recruits as many of your employees are taken into the Army?

5. Have you a morale-building program which will help you to deliver the maximum production from your present staff?

6. Have you research plans under way which will devise means for post-war use of your record production?

If your score is 100% affirmative, then you're really in the war.

Still Plowing It Under

One of our less naive columnists becomes naive when he finds that farmers are still plowing up cotton, to keep within their production quota. "The information surprised me," he writes. It will surprise no textile manufacturer. There has been no change in the basic farm policy from the time when the then Secretary of Agriculture Wallace started his farm control till the time when the now Secretary of Agriculture Wickard carries it on. But times have changed meanwhile. Then, cotton was a glut on the market. Now, a nation at war needs every single ounce of resource that can be provided. It is still said, by the control group, that there is no scarcity of cotton. There *is* a scarcity of needed staples and grades. There *will* be a scarcity of all types of cotton before this man's war is over.

We have stated before in these columns that all bars should be lifted. We repeat it.

Farmers should be paid a bonus to produce *more* cotton, instead of a bonus to produce *less*. How long do we have to wait, for orientation of our agricultural program to a world at war?

Say It Out Loud!

A recent meeting between textile-association executives and representatives of WPB and OPA helped to clear the air. It was revealed that trade associations are no longer in the dog-house; that their help is needed and welcomed. But how about making it official? How about an affirmative statement from each of those two agencies? How about giving associations priorities on news, releases, orders, regulations, and amendments?

Many of our good friends among the association executives call us up or write us for copies of such documents. They should get them at least as soon as the press does. They should be consulted far more frequently, before the orders are formulated—and not made aware of them by incomplete news items in local papers.

The associations are the greatest potential help the Government agencies have. Use them!

And let the world know that they are being used!

"Mr. Mac"

The testimonial dinner to William M. McLaurine, secretary of the American Cotton Manufacturers Association, was a "natural." The speakers had an easy and happy assignment. All they had to do was to talk from their hearts—and they did. There was none of the synthetic "This is the man than whom . . ." which features many testimonials. Instead, it was "This is Bill McLaurine, the man"—"This is Mr. Mac."

"Mr. Mac"

For it is the very humanness of Mac which has made him a national textile figure. His accomplishments for the industry, great as they have been, are secondary to the man himself. He is a breath of fresh air in any gathering in which he finds himself. The hard-boiled school does not understand him. Because he is an incurable optimist, a philosopher, a dealer in human relationships.

The world is a better world because of the "Mr. Mac's."

A New Hope, but New Responsibility

A new hope stirs in the world. The British victory in North Africa, the landing of American troops in north and west Africa, and the promise of a new front via Italy, stir all of us as we have not been stirred since the bombing of Tokyo last April. The United Nations have taken the ball. It is possible that they will continue to carry it into Berlin, and later into Tokyo. No one need apologize for a surge of hope and confidence.

But, if we fool ourselves—if we think for a minute that we have won the war, or even that we have assured ultimate victory—we will be playing into Hitler's hands. We will have a repetition of the psychological binge which resulted from the short-war pipe-dream in which many of our citizens indulged earlier this year. Such a fallacy would impede our production-line, our bond sales, and all the other offensives on our home-front which just now are beginning to get into high. It would soften us to the point where we could not take the intermittent bad news which inevitably is ahead of us, in the form of reversals and casualties. It would endanger the lives of our soldiers and sailors and marines—of our own boys. For, without the home front there can be no lasting victories on the battle-line. That fact must be kept in mind.

As we take new hope from the events of the last month, let us also take new resolve that temporary victories will not lull us to sleep, but on the contrary will strengthen our all-out determination.

Chatham Mfg. Co., Elkin, N. C.—Following presentation of the banner, Maj. Gen. C. L. Corbin (left) presented the employees' "E" pin to Dave Woodruff (center) who had spent all his working life with Chatham and who accepted the pin symbolically for all of the workers. At left is Lieut. Commander Thurmond Chatham, president of the company, who represented the Navy in the ceremonies. Seated in background is Clyde R. Hoey, former governor of North Carolina. The speakers' table is draped with a Chatham Army blanket.

J. L. Stifel & Sons, Wheeling, W. Va.—Group of officials lined up behind the "E" banner on the occasion of the presentation ceremonies: (left to right) Lt. Arthur C. Stifel, Jr., U. S. N., Lt. Col. R. T. Stevens, Arthur C. Stifel, Sr., Col. John P. Welch, Col. Harold C. Fellows, Capt. L. A. Herron, Lt. J. A. Koerber, Lt. Com. C. M. Royal.

Johnson & Johnson, New Brunswick, N. J.—Rear Admiral Ross T. McIntire, Surgeon General of the Navy, gives Frank A. Cosgrove, treasurer of Johnson & Johnson, his "E" lapel pin in the token award made to four employees chosen by their fellow workers to represent them at the "E" banner presentation ceremonies.

30 Textile Mills Fly "E" Pennant

Award for excellence of achievement in production

THE ARMY-NAVY "E" BANNER now flies over 30 textile mills and the list is growing each week. In the official wording, the award is made for "high achievement in the production of war material." The "E" stands for "Excellence" and was originally a Navy tribute to individual ships which made good records in maneuvers. The mark may now be worn as a lapel button by employees of the industrial plants which have earned the award by maintenance of schedules and quality of output. The textile honor-roll at time of writing follows alphabetically:

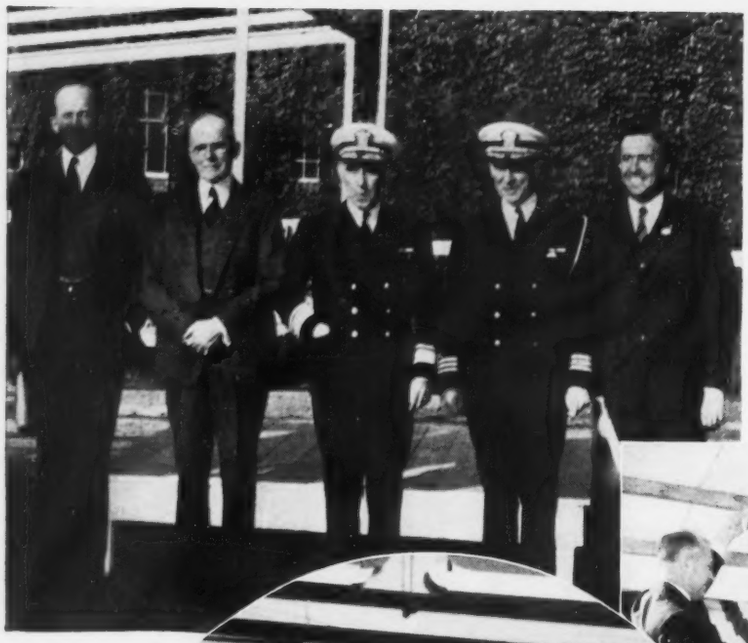
Aberfoyle, Inc.
Bauer & Black (Div. of Kendall Co.)
Beaumont Mfg. Co.
Belle Knitting Corp.
Bootts Mills
Chatham Mfg. Co.
Clinton Woolen Mfg. Co.
Cramerton Mills
E. I. du Pont de Nemours & Co. (including Seaford and Martinsville)
P. H. Hanes Knitting Co.
Johnson & Johnson
Kent Mfg. Co.
Lincoln Mills of Ala.
Mathews Cotton Mill
Munsingwear, Inc.
Owens-Corning Fiberglas Corp.
Pacific Mills (Worsted Div.)
Pioneer Parachute Co.
Read & Lovatt Mfg. Co.
Shoe Lace Co.
Standard Bleachery & Printing Co.
Switlik Parachute Co.
J. L. Stifel & Sons
United Elastic Corp.
Uxbridge Worsted Co.
Ware and Hampshire Woolen Cos.
West Point Mfg. Co.
Wilton Woolen Co.
Worumbo Mfg. Co.

Pictures of the Pacific and Cramerton presentations appeared in these columns last month. Herewith is a representative collection of pictures of presentations from the rest of the list.

(Continued on next page)

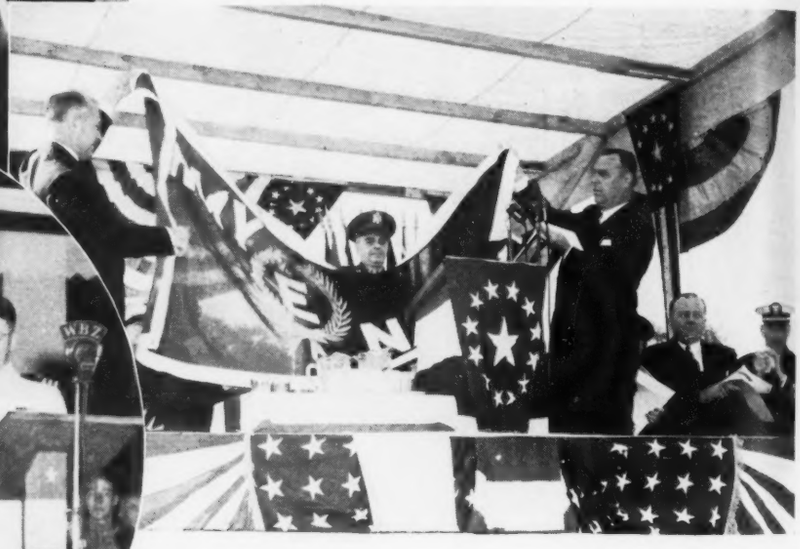
30 Textile Mills Fly "E" Pennant

(Continued)



Boott Mills, Lowell, Mass.—Group which officiated at presentation of banner and "E" pins: (left to right) J. Rogers Flather, assistant treasurer; Frederick A. Flather, Sr., treasurer and manager; Rear Admiral W. J. Carter, chief, Naval Supply Corps, Washington, who presented the pennant; Capt. Frank P. Delahanty, U. S. N., who presented the pins, Frederick A. Flather, Jr., who accepted the pins for the employees.

Munsingwear, Inc., Minneapolis, Minn.—Ernest L. Olrich (left), president of Munsingwear, Inc., and E. C. Wilson (right), vice-president, receiving pennant from Brig. Gen. Joseph E. Barzynski, in command of Chicago QM Depot. Seated at extreme right is Lieut. Commander M. A. Heffernan, U. S. N., and beside him, Harold E. Stassen, Governor of Minnesota.



Clinton Woolen Mfg. Co., Clinton, Mich.—Rear Admiral W. B. Young, Paymaster General of the Navy, presenting "E" pennant to T. B. Nilsen, vice-president and general manager of the company, and to Gerald Ogden, president of the Clinton Woolen Workers Union. Seen just under Admiral Young's arm is M. D. Van Wagoner, Governor of Michigan. Seated at left are Carl Martiny, senior employee; H. R. Hause, assistant secretary-treasurer; C. L. Kimball, secretary-treasurer.

Ware and Hampshire Woolen Cos., Ware, Mass.—Presentation scene with Capt. Frank P. Delahanty, U. S. Navy, at speakers stand. Standing group (left to right): John P. Soja; R. E. West, president and agent of both companies; Albert Lapierre. Fulton Rindge, treasurer is not shown in photo.

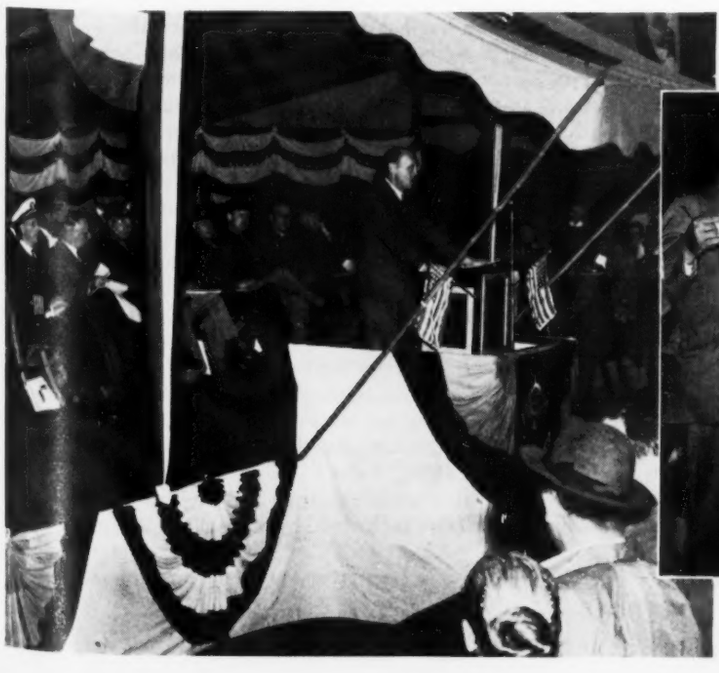
West Point Mfg. Co., West Point, Ga.—Part of the 10,000 mill workers, officials, families and visitors present at ceremony at Shawmut, Ala., where the Army-Navy "E" Pennant was awarded to the six units of the West Point Mfg. Co. All six flags were hoisted at one time to the accompaniment of enthusiastic applause. The mills receiving the award were: Lanett, Shawmut, Longdale, Fairfax, Riverdale, and Lanett Bleachery & Dye Works. Taking part in the ceremonies with Geo. H. Lanier, president of the company, were Frank Dixon, Governor of Alabama, master of ceremonies; Joe Starnes, Congressman from Alabama; Frank B. Williams, agent, West Point Mfg. Co.; Maj. Gen. C. L. Corbin, QMC; Lieut. Commander Edwin Phillips, commanding Naval Training School, Auburn, Ala., and Mrs. Lena Z. Mason, representing employees.

United Elastic Corp., Easthampton, Mass.—Holding the pennant after presentation are (left to right): Edward L. Shaw, president of the company; Col. J. Van Ness Ingram, Army speaker for the occasion; George Picard, representative of employees of the company. Representing the Navy was Lieut. Commander W. M. Saunders, not visible in photo.

Lincoln Mills of Ala., Huntsville, Ala.—Immediately following presentation of the "E" award, Brig. Gen. Allen R. Kimball, commanding Jeffersonville QM Depot, who presented the pennant, is congratulating Charles D. McDuffie (center), treasurer of the mill, and Phillips W. Peeler (right), general superintendent. John J. Sparkman, U. S. Congressman from Alabama, was master of ceremonies.

Beaumont Mfg. Co., Spartanburg, S. C.—Line-up of officials and guests at "E" presentation ceremonies: (left to right) Walter S. Montgomery, president, of company; Lieut. Commander Ernest Burwell, U. S. Navy, Charleston; John J. McCloy, Assistant Secretary of War, who awarded the Army-Navy "E" flag; R. M. Jefferies, Governor of South Carolina; Dr. Henry Nelson Snyder, president-emeritus of Wofford College and master of ceremonies for the celebration; Burnet R. Maybank, U. S. Senator from South Carolina; Maj. Gen. Alexander D. Surles, chief of public relations, United States Army, Washington; and Mrs. Bell Whitlock, spokesman designated by 10 employee-elected representatives previously chosen by popular vote to receive the "E" flag replica emblems for individual employees from Lieut. Commander Burwell.

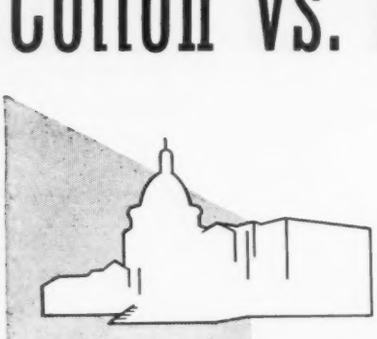
Kent Mfg. Co., Clifton Heights, Pa.—Everett L. Kent (at speaker's table), president of the company, delivering the acceptance speech after presentation of "E" award. At left of those seated is Capt. E. H. Van Patten, U. S. N., who presented the award.



Bauer & Black (Division of the Kendall Co.), Chicago, Ill.—Following the "E" pennant presentation, (left to right) R. A. Whidden, head of Bauer & Black; Brig. Gen. John M. Willis, commanding Medical Replacement Training Center, Camp Grant, Rockford, Ill., who presented the award; Helen Rokosz and Peter Sosovec, employees.

Cotton vs. Rayon Tires a Hot Potato

Jeffers, cotton Senators, and tire-makers all involved in this sizzling issue



McGRAW-HILL WASHINGTON BUREAU

PAUL WOOTON, *Chief Correspondent*
Blaine Stubblefield — Robert Colborn
Carter Field — Irvin Foos — M. G Maury
Dorsey Adams — George E Doying, Jr
J. C. Stark — Richard K LaBan
Malcolm Hobbs — Hunter Snead
E. H Martin — Malcolm Burton

By BLAINE STUBBLEFIELD

Photo by Harris & Ewing

WILLIAM E. JEFFERS, war rubber director, who doesn't mind a "hot potato" like this cotton vs. rayon tire controversy a bit.

ALTHOUGH RESULTS SHOW that most Americans fight hard and long on the production battle front, most of them also take more or less time out to scuffle behind the lines for potential advantages when peace comes. Cotton farmers, rayon manufacturers and tire producers are engaged in one of those tussles: the now famous cotton vs. rayon tire controversy.

Claims and counter-claims are multifarious, some of them unproved, and some untrue. But you can talk with the contestants, examine their aims and claims and get a fairly simple outline of this fuss of the fibers.

The War Production Board, with full approval and even insistence of the Army, has already ordered conversion of viscose rayon facilities to produce an additional 50,000,000 lb. of high-tenacity rayon per year. It must be emphasized that this is not an expansion of the industry by 50,000,000 lb., but a replacement of ordinary rayon by high-tenacity. Some poundage increase would result, but only by a relatively small percent. Much of the added high-tenacity rayon cord will go into airplane and special duty truck tires; and into self-sealing airplane gas tanks, which have never been made of anything but rayon.

But the controversy is not over the relative merits of ordinary cotton tire cord and rayon tire cord. Seemingly all concerned willingly admit that rayon is superior to ordinary cotton yarn as used in the tire industry. The points of contention are (1) whether the newly-developed so-called "low-gage" cotton tire cord could serve military needs as well as rayon, and (2) should WPB and the Army wait a few more weeks to find out, before going ahead with the rayon conversion.

The second question has already been answered. WPB, at the request of Maj. Gen. Brehon Somervell, chief of the Army Services of Supply, is going ahead with the conversion order. Officers of both WPB and SOS feel they cannot take chances with military tire and gas-tank performance against the alleged uncertainty of the outcome of tests of the low-gage cord. Most critics and interested parties agree with the logic of this determination.

Then if the rayon conversion is a closed issue, why were hearings held by the special Senate Agriculture Sub-Committee?

The reply to this query is that the committee was trying to answer the *first* question stated above. And, more or less incidentally, it was doing a job for the cotton farmers in that tussle-for-advantage-when-peace-comes. Right in there, swinging in self defense, were also the tire men, the rayon men, and WPB and Service men whose military welfare is at stake, like the economic welfare of the others who are involved in the question.

ONE OF THE REASONS it is hard to reach conclusions about the rayon-cotton tiff is that most experts, who really know their stuff, are partisans on one side or the other. There is no scholarly umpire around to call the plays for you. For instance, when the writer inquired of WPB concerning the hearings, he was told that they were held to make a liar out of William E. Jeffers, the war rubber director appointed by Donald Nelson. It sounds all right because Jeffers had just knocked the farm bloc's ears down by telling it he would convert rayon, come hell or high cotton surpluses.

But it was only partly true. The future of the astute Senator Allen Ellender of Louisiana, chairman of the sub-committee, did not depend upon revenge against Jeffers, but upon the good will of cotton growers, and what they want is a market for their product.

Tire manufacture was, when the war began, the largest of all cotton consumers, taking nearly three quarters of a million bales. Since 1935, synthetic tire cord had been gaining on cotton. Thus both are big industries. But the

foreign as well as the domestic aspects are vital. The defeated Germans and Japanese, both keen producers of synthetics, will put their cheap manpower to work on us the minute they begin reconstruction, and will take our world-wide tire business away from us unless we continue to push a synthetic program in an effort to meet their competition. Both sides agree on that, and the cotton men add that the foreign competition will take foreign cotton, too.

Senator Ellender insisted Congress would not interfere if it knew that rayon cord would serve the Army better than cotton, but he spared no man's face in an effort to assure himself.

He wanted to know how come the Requirements Committee had issued Directive No. 57, which would have put the rayon conversion program under way, long before Jeffers was appointed, and before the Army had gone on record in favor of it. He wanted to know why Jeffers had gone ahead with his rayon program without visible approval of the Army. The Army later rushed in with its approval in the form of a letter to Jeffers from General Somervell. Then Ellender asked Army witnesses why they hadn't tested low-gage cotton cord before they asked for the rayon conversion. And when Army men said they were not aware of the new cord, he asked them if it wasn't their business to learn such things, and they said they just didn't know.

General Somervell's letter says high-tenacity rayon gives necessary lightness in airplane tires, and withstands the heat generated in combat tires because of their extreme thickness. He says requirements for these purposes will be about 74 million lb. of high-tenacity rayon per year. The proposed conversion, he says will make available about 96,000,000 lb., which will leave 22,000,000 lb. for other Army uses.

Information to date, says General Somervell, indicates that the newly-developed low-gage cotton cord will be adequate in strength and in rubber saving for tires of 7.50 inches diameter and smaller, but there is not sufficient evidence it will do for larger sizes because not enough synthetic rubber tires, which generate the troublesome heat, have yet been produced.

The General goes on to say that Buna S synthetic rubber generates high temperatures in flexing, and that high tenacity rayon resists this heat better than any other materials in tests so far. He says he understands that conversion of rayon facilities to high tenacity production, if started now, would not be ready till the fall of 1943, and as the tire situation may then be critical, Army does not want to take chances by waiting.

Military tests of conventional cotton cord tires as compared with rayon cord tires have been going on since last March, but test of low-gage cotton cord tires have been started only recently.

WPB witnesses said that five rayon companies were to be converted to the high tenacity program: Du Pont, American Viscose, American Enka, Industrial Rayon, and North American Rayon.

Critics of the conversion said it would not only take a long time but it would take three or four thousand tons of critical materials. There was general disagreement whether equipment used by tire manufacturers for treating cotton cord for use in tires could be used for treating rayon cord, and estimates of the cost of conversion also varied.

Though Army is determined to go ahead with the conversion program, it will not be averse, witnesses said, to accepting the low-gage cotton if and when it proves equal to rayon in service. Some experts, in and out of the Army, said they didn't believe the cotton cord could equal rayon in connection with synthetic rubber. General opinion is that synthetic rubber will be abandoned after the war, due to cost. This could mean that cotton would share the heavy-duty tire industry with rayon, but there seemed to be no basis for such long-range prediction. Rayon has been gaining on cotton for years. Steel wire is also under experimentation instead of fiber for tire structure.

Now, to get down to the recriminations that often come with such controversies: Some of the cotton committeemen made it plain they believe that dollar-a-year men in WPB, from the tire and rayon industries, are whetting their axes on the grindstone of war. They said that some of the tire companies are tied up with the rayon people. Tire makers are accused of aiming at monoply of the tire industry after the war. In case cotton cord should fall out of the picture, they have patents on processes of treating rayon cord with latex for incorporation in tires, in the critics' opinions, and they have expensive equipment which smaller new-comers could hardly hope to afford.

Those are the charges. It is observed by others that if they are true it is the duty of the War Production Board and of the Department of Justice to investigate and take appropriate measures.

In reply to inquiry, some Department of Agriculture cotton men told TEXTILE WORLD they felt that the synthetic fiber makers have won out all along the line with superior research. The cotton men, they said, have the organizations for research, but they by no means match their competitors in amount of appropriations or in boldness of outlook.

Textile News From Washington

Army of 7,500,000 Men: It wasn't military secrecy that caused all that newspaper speculation on the ultimate size of our Army; the military chiefs just didn't know. Planning military man-power was like planning the war materials and production programs. No one could calculate our potentialities accurately enough to keep steel plate and twill and aluminum and castings and duck in balance.

So the Army let the press guess because it had no decision of its own. Now, the military chiefs figure they can take 7,500,000 men and leave enough, with the women's help, to produce living necessities and war goods.

Army's decision on the 7,500,000 objective makes no difference to the Quartermaster's textile procurement program. Huge calls for offers of cloth are coming right along, with the prospect that combined Army and Navy man-power, totaling just under 10,000,000, will consume substantially more than half the textile industry's output in many kinds of goods.

The Air Force will have about 2,200,000 men; ground units, 3,300,000; additional in training and in Services of Supply, 2,000,000. The Navy is now approaching 1,500,000, will reach nearly 2,000,000 in 1944.

Back to Flannel—Under Amendment No. 2 to Order L-99, WPB on Nov. 6 authorized one half of the outing flannel looms, which on Apr. 20 were converted to produce bag sheetings, to be reconverted to manufacture flannel. The action is related to need for more flannel for night shirts and pajamas, though the trade believes it is too late in the season to help. However the Army is said to need more flannels anyway.

If You Need Auxiliary Equipment: Auxiliary equipment—such as electric motors, pumps, fans, blowers, generators, etc.—is increasingly hard to get. This is true in all industry, including textiles. A few new items are available, and they are obtained, as usual, on priority form PD-1-A. Failing to obtain new equipment, you are advised by the Textile Machinery Division of WPB to try for second-hand goods if your old units cannot be repaired. There is still a large number of auxiliary machines on the used market.

Addenda to Textile War Manual

PRICE CEILINGS AND AMENDMENTS BY OPA

Burlap—Several changes applying to the determination of replacement price of burlap used in the manufacture of new textile bags were supplied Oct. 5 by OPA through Amendment No. 2 to MPR No. 151 (New Bags). The amendment to the new bag regulation, effective Oct. 9, adds provisions similar to those set forth in a recent amendment to the burlap price schedule No. 18.

Cotton Goods—Two actions on cotton goods, one applying to transportation charges on purchases by war procurement agencies and the other involving premiums for sheetings and print cloths used in products made to meet certain U. S. Army specifications, were announced Oct. 23 by OPA. Amendment No. 9 to RPS No. 35 provides that war procurement agencies of the Government, in purchasing cotton goods covered by the schedule from a non-mill seller, may reimburse the seller for transportation costs incurred in bringing the cotton goods from mill points. The amendment also allows purchasers to pay a previously authorized premium for certain fabrics which are to be coated with synthetic resin, already contracted for but on which they had not taken delivery up to Sept. 15. The previous amendment, No. 7, on that date provided a premium of ½c. a yard for better quality sheetings or print cloths made for use in products manufactured to Army specifications which require synthetic resin-coated sheetings or print cloths.

Cotton Goods, Woven—Premiums for wide-woven cotton goods provided by two OPA price schedules were reduced by OPA on the basis of a study of production costs showing that "conversion" costs are uniformly less on wide goods than on narrow goods. The revision sets premiums at manufacturing levels of 5 to 7½% for the affected goods—42 in. and wider—over the maximum prices for narrow fabrics of the same type. The previous premiums allowed by the two price schedules ranged from 10 to 17½%. The reductions of from 2½ to 10 points will affect goods made for industrial purposes, as well as some consumer cotton goods. Wide goods whose premiums are reduced through the issuance of Amendment No. 12 to MPR No. 118 (Cotton Products) include sheetings (other than bed linen), drills and four-leaf twills, sateens, print cloths (other than wide window-shade cloth), and gray soft-filled sheetings. In addition, through Amendment No. 8 to RPS No. 35, ceiling prices for wide osnaburgs are lowered from a premium of 10% over narrow osnaburgs to 5%. Both amendments affect new contracts entered into on and after Oct. 12.

Rayon Yarn—Specific ceiling prices for several additional important rayon yarn converting operations are added by OPA to those originally provided by MPR No. 168. The regulation as issued set forth 15 price tables for certain types of converting services performed in changing rayon yarn from its original form to prepare it for weaving and knitting. All other types of finishing services not specifically provided by these tables were governed by the GMPR. Five more tables covering certain twisting and dyeing operations are now supplied through Amendment No. 1 which became effective Oct. 10. In addition, provision is mode for establishing maximum prices for all other types of converting operations not specifically enumerated at ceilings "in line with" charges for the nearest related service for which a price is set. Dollars and cents prices are provided by the amendment for the following additional five classes of converting services supplied by commission converters or applied to rayon yarn offered by sellers of converted yarn: Table 16—combination silk and viscose twisting; Table 17—dyeing 100% viscose yarns in skeins; Table 18—dyeing spun viscose and acetate blended yarns in skeins; Table 19—dyeing spun viscose and wool blended yarns in skeins; Table 20—dyeing spun acetate and wool blended yarns in skeins.

Textile Piece Goods — Policies adopted by OPA with respect to petitions by converters who also wish to act as jobbers of finished textile piece goods under the provisions of MPR 127 were announced Oct. 16 by the issuance of six OPA orders. In four of the six orders, OPA grants petitions to permit disposal of finished piece goods inventories acquired by the petitioners prior to the effective date of Regulation 127, at mark-ups allowed for jobbers by the regulation. One order denies a converter permission to charge jobbers' premiums. Another allows a converter to engage in the jobbing business, but subject to the limitation that sales of jobbed goods do not exceed 16% of his total business.

Thread, Cotton—OPA on Oct. 2 authorized ceiling prices for certain cotton sewing threads at levels which may enable industrial users to save from 30 to 40% of the price of silk thread previously used. Maximum prices for "Belcort" cotton threads manufactured by Belding Heminway Co., New York, are established on the basis of material and labor costs calculated as of March, 1942, and the mark-up above cost received by the seller last March on sales of silk thread. The cost of the new product calculated as of March, is represented as being about 60 to 70% of the cost of silk thread.

Woolen & Worsted Apparel Fabrics—Two manufacturers of woolen and worsted civilian apparel fabrics are permitted Oct. 14 by OPA to adjust maximum prices for certain fabrics produced by them which were shown to be abnormally low in relation to the maximum prices of other manufacturers for the same or comparable fabrics. Means by which jobbers of woolen and worsted apparel fabrics, who also originate their own designs, may seek adjustments of ceiling prices were announced Sept. 25 by OPA.

Wool, Wool Tops & Yarns—A method of determining maximum prices for wool, wool tops or yarns, after authorization by OPA in cases where the pro-

READERS who may desire to consult the original releases from OPA and WPB, which bear particularly on their businesses and which are summarized on these pages, may obtain such copies, as long as the supply lasts, by writing to TEXTILE WORLD's Washington office (at National Press Bldg., Washington, D. C.) specifying the title and number of the order.

Addenda to Textile War Manual

visions of RPS No. 58 as amended, are not applicable, was announced Oct. 6 by OPA. Instances have arisen where sellers, not covered by the specific prices set forth in the appendices of the schedule, cannot determine their maximum prices under the "base period" provisions of the schedule. Under the procedure supplied through Amendment No. 9 to Schedule 58, in each such case the seller must submit to the Washington office of OPA an application setting forth the basic information needed before authorization can be given to the seller to determine his ceiling in line with the level of maximum prices established by the schedule. Such sellers have no "base period" sales on which to figure.

Work Clothing—a postponement from Oct. 1 to Nov. 10, of the date by which manufacturers and wholesalers of staple work-clothing must file statements and price lists with OPA as required by MPR No. 208, was announced Sept. 28.

PRIORITIES AND ALLOCATIONS—AMENDMENTS BY WPB

Agave & Manila Cordage—Production of agave fiber cordage for non-essential civilian purposes has been completely prohibited by the War Production Board, said WPB on Sept. 28. In Order M-84, as amended, processors of agave cordage are directed to cancel immediately all orders for non-essential civilian purposes. On Oct. 5, WPB provided in Order M-84, as amended, that until Nov. 16 agave cordage can be used for wire rope centers as one of the permitted essential uses. At the same time, the Textile, Clothing, and Leather Goods Branch declared that any cordage processor who has on his books a rated order for procurement of cordage can extend the rating to producers of jute or cotton yarns if agave or manila are not available.

Cotton Mill Industry—The Cotton Mill Industry Advisory Committee met in Washington on Oct. 8 at the call of Frank L. Walton, Government Presiding Officer, to discuss problems of production in the industry. He said that in view of the present military program and industrial and essential civilian needs, all the production possible in cotton fabrics and yarns would be needed. He added that Lend-Lease and foreign requirements made it doubly important to attain maximum output.

Cotton Textile Fabrics—Inventory restrictions for cotton-textile fabrics covered by Orders M-107, M-134, M-166, M-207 and M-218 apply to all cotton fabrics listed in the orders regardless of whether they are obtained through use of preference ratings, WPB said on Oct. 7. Some members of the cotton-textile industry had erroneously believed that fabrics secured without the use of a rating were not subject to the inventory restrictions.

Crop Cultivation Fabrics—Use of preference ratings for obtaining crop cultivation fabrics was extended to orders placed with manufacturers by ultimate consumers of the fabrics by an order issued Oct. 10 by WPB.

Pin Check Fabrics, Denims, etc.—Pin check fabrics, previously not included under provisions of Order M-207, have been added to Schedule I of the order by Amendment No. 1 issued Oct. 12 by WPB. The classification of denim also was changed by the amendment. Material of 1.60 yard regular finish weight formerly did not include a "shrunk weight basis" listing. "Shrunk weight basis" is the weight per yard of the material after being put through a shrinking process. For the 1.60 denim, the shrunk weight basis of 11 oz. now is included. Construction for denim stripes covered by the order are restricted to 2.20-yard regular finish weight (8 oz. when shrunk). Amendment No. 1 removes from inventory restrictions mole-skin and corduroy work pants, and the following fabrics: cotton suede, corduroy and mole-skins. All of these garments and fabrics are of a seasonal nature necessitating accumulation of inventories several months in advance. In an amendment to Schedule II, work gloves for seasonal use and the fabrics from which they are made also are removed from inventory restrictions.

Silk Hosiery, Used—WPB on Oct. 12 amended Order M-182, which froze stocks of used silk hosiery in the hands of dealers, in order to bring used Nylon hosiery under its provisions. The amendment also clarifies restrictions on sale and uses of second-hand silk and Nylon hosiery. The restrictions apply only to those who sort, process or are actually engaged in the sale of used hosiery. The following sales and uses by these dealers are allowed, in addition to those permitted by the original order: 1. Sales and deliveries either by or to the Defense Supplies Corp. 2. Small dealers can dispose of rags containing a small percentage of used hosiery to sorters and other persons. 3. Dealers or sorters can sell used stocks to other dealers or sorters in order to expedite accumulation of carload lots. 4. Processors can manufacture used hosiery stocks on hand into powder bags for the armed forces. 5. Used hosiery purchased from the Defense Supplies Corp. can be released to persons who have authorization of the WPB to buy and use the material for specific purposes.

Sulfamic Acid—Sulfamic acid, used as a flameproofing agent in the textile industry, as a leather softener, and in the manufacture of dyestuffs and dry colors, was placed under complete allocation control on Oct. 5 by WPB. Allocations, under Order M-242, will take effect on Nov. 1. The regular chemical forms, PD-600 and PD-601, are to be used for requests for allocation and for reports by distributors.

Wools, Carpet—Over 30,000,000 lb. of previously restricted carpet wools were released for the manufacture of floor coverings Oct. 9 by WPB. Floor-covering manufacturers had been prohibited from using this wool in the belief that it could be adapted for the manufacture of clothing. Only a very small part of these fibers were consumed by the apparel industry during the period they were restricted for apparel use. The action rescinding the previous restrictions was taken in Amendment No. 2 to Order M-73. While the bulk of the carpet wool can now be used in the manufacture of floor coverings, it was emphasized that the consumption quotas set up by M-73 for carpet wool are not changed. A few of the better types of carpet wool still are restricted to use by apparel manufacturers. These include: Persian Gulf fleece, New Zealand fleece, Criolla, Joria, and Thibet No. 1 white.

CTI and Government Talk It Out

QM, WPB and OPA pay their tribute to industry at Institute's annual meeting

THE LONG ROAD which the cotton-textile industry has traveled since the beginning of the defense program, through Pearl Harbor, and down to the present all-out production effort for war, came to a temporary turning-point at the annual meeting of the Cotton-Textile Institute in New York, Oct. 22, and at the coordination conference of association executives on the following day. Officials of QM, WPB, and OPA, paid tribute to the war-energy of the industry, and to the personal sacrifices of the many men who have represented it in Washington.

In the case of QM, the tribute was not belated, because General Gregory and General Corbin have never missed an opportunity to acknowledge the completeness of the textile job. In the case of WPB, the tribute was also, in another sense, not belated, because after all the job in that agency had been done by textile men themselves, who naturally hesitated to blow their own horns. In the case of OPA, the tribute *was* belated, because not since the days of Jim Davis had there been an intimation that the textile industry was anywhere except in the dog-house, so far as that agency was concerned. But the tribute was no less welcome.

On the industry's side, the pledge of continued cooperation was made, with an important reservation. In the words of Dr. Claudius T. Murchison, president of the Institute, "We must not confuse the theories and the methods and the concessions which are necessary to the winning of this war with the theories and the methods which are essential to the maintenance of the democratic state after the war is over." That declaration of an American industrial philosophy was acknowledged, but weakly questioned, by an OPA official.

The principal by-product of the meeting was a clarification of the part that the trade association can play in the war effort. That issue was faced in the coordination conference. It became apparent that Government agencies have lost their suspicion of association executives—and realize their potential helpfulness. Out of that conference should grow a more effective use of the associational facilities.

The principal speakers at the Institute's annual meeting were: Dr. Claudius T. Murchison, president of the Cotton-Textile Institute; J. K. Galbraith, deputy administrator of OPA; Lt. Col. Edward S. Shattuck, chief counsel of the Selective Service Division; Lt. Col. Robert T. Stevens, of QM; Perrin N. Collier, vice-president of Callaway Mills; Dr. D. F. J. Lynch, director of the Southern Regional Research Laboratory; and Dr. Simon Williams, of University of Texas.

Dr. Murchison was reelected CTI president; Herman Cone was elected vice-president for the South and C. F. Broughton vice-president for the North.

At the coordination conference, Frank Walton, deputy chief of WPB's textile branch, and Bernard Haley, director of Textiles, Leather and Apparel Section of OPA, submitted themselves to a barrage of questions and comments, mostly off the record.

ANNUAL ADDRESS of Dr. Murchison was a frank and critical appraisal of the situation fronting the industry. Referring to production and labor he said, "After the superhuman exertion of the last year the industry may be said to have reached its production crest. It is operating at a current cotton consumption rate of **11,500,000 bales a year,** and is employing approximately 520,000 workers. But employee separations are now somewhat larger than accessions. The annual turnover rate for the industry as a whole is now about 100%, which reflects vividly the transiency of labor under present conditions. It may be expected that the percentage of women employees in the industry will grow very rapidly." He hoped that the 18-year age minimum for women under Walsh-Healey Act might be lowered.

He commented on the current problem of absenteeism, sometimes amounting to 7 to 10% of the payroll. As a remedy he suggested a program of education to acquaint employees with the vital importance of their work in the war effort, counting on their patriotism to improve their loyalty to their job.

Dr. Murchison pointed out that cotton, in competition with substitutes, needs the benefit of scientific research and sales promotion. "Research devoted to it promises richer rewards than research on any single organic substance."

After the war, the world-wide demand for cotton and cotton goods may be transient, he said, and there will follow the pressure of keen competition from many sources. Faced with this situation, he stated, "We certainly do not wish to find refuge in wage cutting, or in slashing the price of cotton. Fortunately there is an alternative refuge in our own resourcefulness and ingenuity in raising cotton to higher levels of peacetime consumption in the United States. For this task we must employ as never before these twin magicians of science and promotion. Cotton can be transformed by science and revolutionized beyond our present dreams. Cotton promotion now is the building of faith in cotton, a knowledge of its qualities, an appreciation of its charm and usefulness."

Lt. Col. Robert T. Stevens, QMC, referred briefly to the fabrics being produced in adequate quantities for the Army, and to those needed in still greater yardage. The duck output was twice doubled from January to July of this year, he said, and an annual capacity of 600,000,000 yds. of all types of duck can now be made available. "The current rate of production of cotton duck is five times normal; and 38% comes from converted carpet, plush and upholstery mills. Based upon present known requirements, production in this field is fully adequate.

"The supply of combed yarn for uniform twill," he went on, "is still not sufficient to meet our needs. Combed twill is the most satisfactory fabric for summer and tropical uniforms, but we have found it necessary to purchase many million yards of Type IV carded-cotton khaki uniform twill. Balloon cloth and marquisette is another spot where increased production is necessary. The ideal cold-climate fabric is Type I, 5 oz. twill, which is comparable with Byrd cloth. Since this supply is limited we have to use the next best thing which is poplin. We should like very much to have more Byrd cloth."

Lt. Col. Stevens stated that although the QM endeavored to stabilize production of military fabrics, avoiding peaks and valleys, the development of a

changing war picture did not always permit it. He pointed out that the size of the army next year (7,500,000 men) made the supply job one of great magnitude; the fact that in combat supplies are used up at a much faster rate than when troops are in training; the growing need of our Allies for textiles as well as munitions; and the development of new items and new uses for old.

"To keep production on a high level will be no easy task for you," he said. "It is my considered opinion that cotton-textile production has reached its peak. It will require the finest type of management and the highest grade of American ingenuity to hold up our production level through coming months. For that the Army depends on you."

J. K. Galbraith, of OPA, listed as the most important lesson of the last 14 months of price control, the fact that OPA and the industry have learned to work together. He added that the job done by the 25 or 30 separate industry groups deserves the thanks of the entire industry and of the entire country.

He stressed his desire to simplify the existing structure of regulations, reducing it to dollars and cents terms, wherever possible. One of the practices which has resulted in successive amendments to an original regulation, he explained, has been the habit on the part of some manufacturers of taking advantage of provisions never meant for them.

He closed with expression of belief in increasing emphasis on simplification and standardization of products for the sake of conserving materials, conserving manpower, conserving equipment and for adding simplicity and effectiveness to the methods for stabilization.

Lt. Col. Edward S. Shattuck explained the simple purposes of the Selective Service System in a sentence: "In determining which of those who remain shall be drawn upon first, it is just good common sense to consider their present family relationships and their present work, and to put those in military service first who will cause the least disruption to family relationships and to the work necessary to the War Effort." He urged that every employer inventory his man and woman power in two groups—those having no military liability and those who have military liability and are physically fit. The latter should be further graded as to their degree of importance to war production. The employer who requests deferment of men who can and should be replaced by persons not needed for military service, he said, is depriving his country of men needed to fight this war; the employer who fails to ask deferment for his keymen and to place all facts before his board is negligent.

AT THE ANNUAL LUNCHEON: Lt. Col. R. T. Stevens (left) addressing the Institute. Beside him (left to right) are Dr. C. T. Murchison, CTI president; Paul Halstead, CTI secretary; P. N. Collier, Callaway Mills.

RESEARCH SYMPOSIUM: P. N. Collier (left) speaking; others (left to right) are F. S. Blanchard; Dr. Simon Williams; Dr. D. F. J. Lynch.

"SCIENCE LOOKS AT THE FUTURE OF COTTON" was subject of the research symposium of which F. S. Blanchard, president of the Textile Research Institute, presided. Perrin N. Collier spoke on the thesis that there will always be a textile industry, but that cotton can no longer depend on its history for prestige. "It must stand on its merits alone," he said. He outlined a program which will aid cotton in holding the favorable position it already has—(1) breeding of plant, (2) better handling from field to mill, (3) machinery research, (4) economic research, (5) study of fiber's physics and chemistry.

Dr. Simon Williams of University of Texas, gave an eloquent plea for a cotton-research program. "If ever an industry needed research, it is the cotton industry," he said. New products, greater utilization of the inherent strength of the cotton fiber; new farming techniques, were a few of the fields for investigation he mentioned. He closed with a description of the Institute of Paper Chemistry and its achievements. "I will contribute free for nothing everything I have to bring into being such an institution for textiles."

Dr. D. F. J. Lynch described the scope of his Government-established laboratory. It now employs 305 persons, of whom two-thirds are research investigators and 80% of its effort is directed to cotton. However, at present, its projects are short-time projects related to the war effort. Among the projects, he named: developing suitable cotton bags to handle raw sugar, and a cotton binder twine to replace sisal and hennequin; use of lint cotton as linters; testing to evaluate various finishes.

Fabrics For Military Purposes

Cotton marquisette for sandfly bars; fabrics for use in outfits for WAACS

NETTING, COTTON MARQUISETTE is being sought by the Philadelphia Quartermaster Depot in an initial invitation for 50,000,000 yd. of sandfly bar. This fabric is described in Tentative Specification P.Q.D. No. 260, as a 1.8 oz. per sq.yd. marquisette of clean, well-combed, evenly spun cotton yarn. The netting shall be singed, well mercerized, and given a permanent finish of such a character as to make it resistant to slippage of the warp yarns along the filling, and shall be sized to a character of finish to meet the approved sample. Grade shall be firsts. The weave shall be 1 pick of leno and 3 of plain as illustrated in the specification. The netting shall be woven so as to cause the picks in each group of three to be pushed close together to form well defined opening between groups. The netting shall be evenly dyed an approved shade of olive drab, without the use of sulphur dyes, and shall show a good fastness to weather when exposed for 10 days. Fastness to water test shall be conducted as outlined in paragraph 6, Section XIII Federal Specification CCC-T-191a. Shrinkage, when subjected to tests in paragraph 2, Section XIV of Federal Specification CCC-T-191a, shall not be more than 8% in warp nor more than 8% in filling. The marquisettes shall have a minimum weight of 1.8 oz. per sq.yd., and shall have a width of 38 in., including a ⅜ in. leno or solid selvage on both sides. Threads per inch shall be 50 to 52 warp and 50 to 52 filling. Breaking strength by the 1x1x3 grab method shall be 28 lb. warp and 20 lb. filling. Meshes per sq.in. shall be 625 to 676. Size of holes shall be .03 × .0325 in. maximum. [Although not stated in the specification, the following gray construction is approximately correct to produce the required fabric: 39 in. 50x56, 7.12 yd. per lb., 40s warp, 40s filling.]

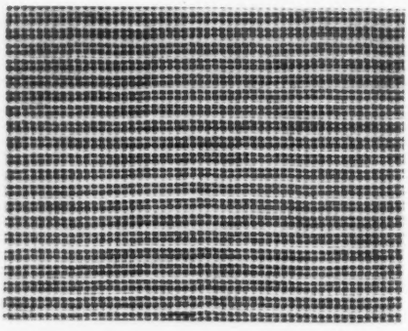


Fig. 1. Cotton marquisette 1.8 oz.

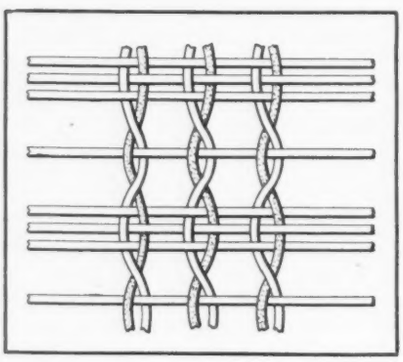


Fig. 2. Weave diagram for marquisette.

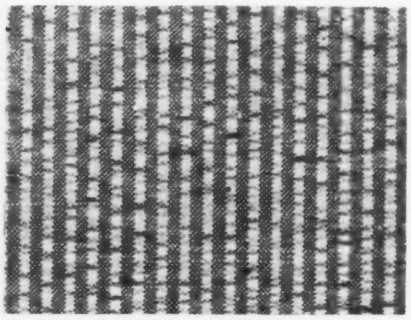


Fig. 3. Seersucker for WAACS' exercise suits.

SEERSUCKER CREPE will be employed for making exercise suits and matched bloomers for the Women's Auxiliary Army Corps, WAACS to most of us. The fabric shall be a green striped seersucker according to Quartermaster Corps Tentative Specification P.Q.D. 210. Grade shall be firsts. Yarn shall be carded and evenly spun. Weave shall be plain produced with pronounced creped or seersucker stripes by using 6 ends of "tight beam." and 8 ends of "slack beam" weaving two ends as one to each repeat. The tight beam shall be yarn dyed with vat dyes to a green shade to match the standard sample. The cloth shall show good fastness to weather, laundering, and bleaching. The cloth shall be practically free from size and shall be preshrunk so shrinkage shall not be over 1% in warp and 1% in filling. The seersucker shall have a minimum weight of 4.2 oz. per sq.yd. Threads per inch shall be 115 x 82 minimum. Breaking strength by 1x1x3 grab method shall be 32 lb. warp and 45 lb. filling. [Although not stated in the specification, the following gray construction is approximately correct to produce the required fabric: 38 in. 112x84, 3.48 yd. per lb. 36s top warp, 40s ground warp, 40s filling.] Combed yarns to get quality and break will be specified.

BATHROBES, FOR WINTER use by the WAACS are to be manufactured as described in Quartermaster Corps Tentative Specification P.Q.D. 217. Fabric, unless otherwise specified, shall be a corduroy which in the finished fabric shall have no defects affecting the appearance or serviceability. The color shall be an approved shade of wine obtained with either vat or naphthol colors. The corduroy shall have a minimum weight of 7½ oz. and a maximum of 8¼ oz. per sq.yd. Cords or wales per inch shall be 8, with at least 36 in. of pile surface available between selvages. Shrinkage shall not exceed 5% in warp or 3% in filling. Number of threads per inch shall be 48 x 118 minimum. Breaking strength minimum by 1x1x3 grab method shall be 40 lb. warp and 35 lb. filling. [Although not specified in the invitation for bids, the following gray construction is approximately correct to produce the fabric: 38 in. 46x120, 1.70 yd. per lb., 16s warp, 13s filling.]

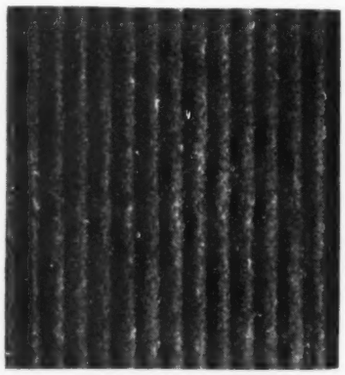
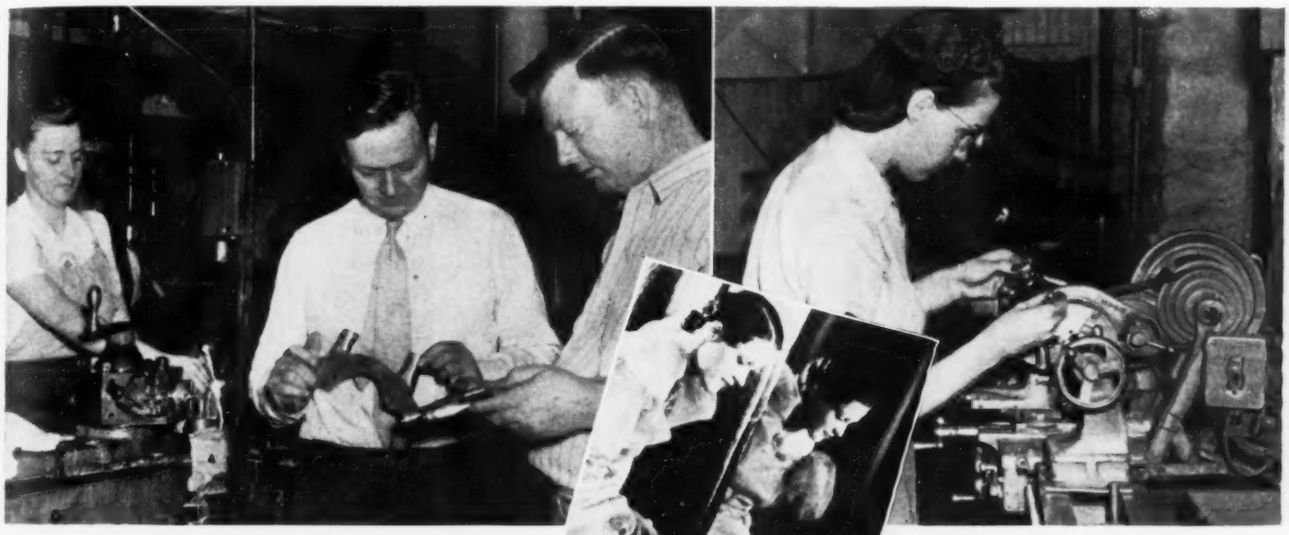


Fig. 4. Corduroy for WAACS' bathrobes.

Plane Parts Replace Silk Hosiery

Se-Ling uses machine shop and nimble fingers in war conversion



Maclin P. Davis, president, Se-Ling Hosiery Mills, in center, and the shop superintendent, W. E. Stringfellow (right) examining plane parts made in the mill. The girl at left, operating a turret lathe, is Evelyn Kelly. She uses both hands for operations and turns out nearly twice what a man did on the same job. She formerly worked at a hosiery machine.

Miss Jane Menefee, the Se-Ling hosiery model. At left as she appeared pre-war; at right—as she appears today working at a machine in the Se-Ling plant, turning out parts for warplanes.

A BROAD-SHOULDERED middle-aged man who had once played football and baseball at Harvard, swung aboard a Government train soon after it rolled into Nashville, Tenn., nine days after Pearl Harbor. The train was one of those sent out over the country to show what was needed for war and what small manufacturers might do to help.

Maclin P. Davis, president of Se-Ling Hosiery Mills, walked over to the consultant on the train and said: "We would like to do something to help. We will do anything—we are willing to convert."

"What kind of plant and equipment do you have?" the Government man asked.

"A hosiery mill," Mr. Davis replied.

"Sorry," the consultant smiled, "but you're just on the wrong train—there's nothing here for you." He was polite enough about it, but Uncle Sam didn't need women's hosiery just then and had not listed any needs which the silk machines could produce.

But—

Two months later, on his own initiative, Mr. Davis had rounded up some machine tools and was converting the ground-floor machine shop of his own plant into a portion of the plant for turning out parts for planes. Today the original shop has doubled in size and a manufacturers' pool which Mr. Davis organized to take care of additional business has grown from six to 18 other machine shops—17 scattered over Tennessee and one in Kentucky.

All the production of plane parts at Se-Ling is on the ground floor. First the machine shop section there was converted and more recently expansion has extended into a portion just outside the office of Mr. Davis, at the front. Hosiery is still made, on the floor above, but a limited output, of course, because of restrictions.

At Se-Ling, which long advertised its product nationally as "the aristocrat of exquisite hosiery" and "the silk hosiery with the tiny French seam," girls skilled in operating hosiery machines have been one of the mill's chief assets. Mr. Davis knew he couldn't use the hosiery machines to make plane parts, but he had faith in the ability of his girls' nimble fingers to operate precision metal-working machines.

The success of using his own hosiery workers, trained by his own machinists for the new war work, has been even better than he hoped for. The mill now takes pride in the slogan: "The hand that knit the sock now turns the lathe." Women, on an average, do better work than men, it was discovered. For instance, a girl was trained to replace an experienced turret lathe man. Now the girl is turning out almost twice as much as the man did.

"Take 20 women and 20 men on a production run," said Mr. Davis, "after everything is set, and let them go. You will find that the women will produce over 10% more than the men and the quality of their work will be better."

Training and tooling-up took time before real production began. Some second-hand equipment was bought early in 1942. Equipment not being utilized for war work by the City of Nashville and by Davidson County was leased. At first a few contracts were obtained from plane manufacturers. These were filled satisfactorily and business grew so that the pool was necessary. Even two hosiery competitors —and they still make hosiery—came into the plane-parts production pool.

"Forbidden Textiles"

Fibers, now restricted, will bring exuberance to after-war fashions

"FASHIONS OF THE TIMES," sponsored by the *New York Times* and directed by Virginia Pope, gave New York stylists new food for thought by including with top-flight garments of cotton, wool and rayon, a group of "Forbidden Textiles" which are illustrated herewith. The fibers for the materials used are largely withheld from the public for the duration as the available quantities are being fabricated into military necessities. The profit from the four performances of the style show was donated to the Army Emergency Relief Fund. Seventeen designers and 38 retail establishments took part.

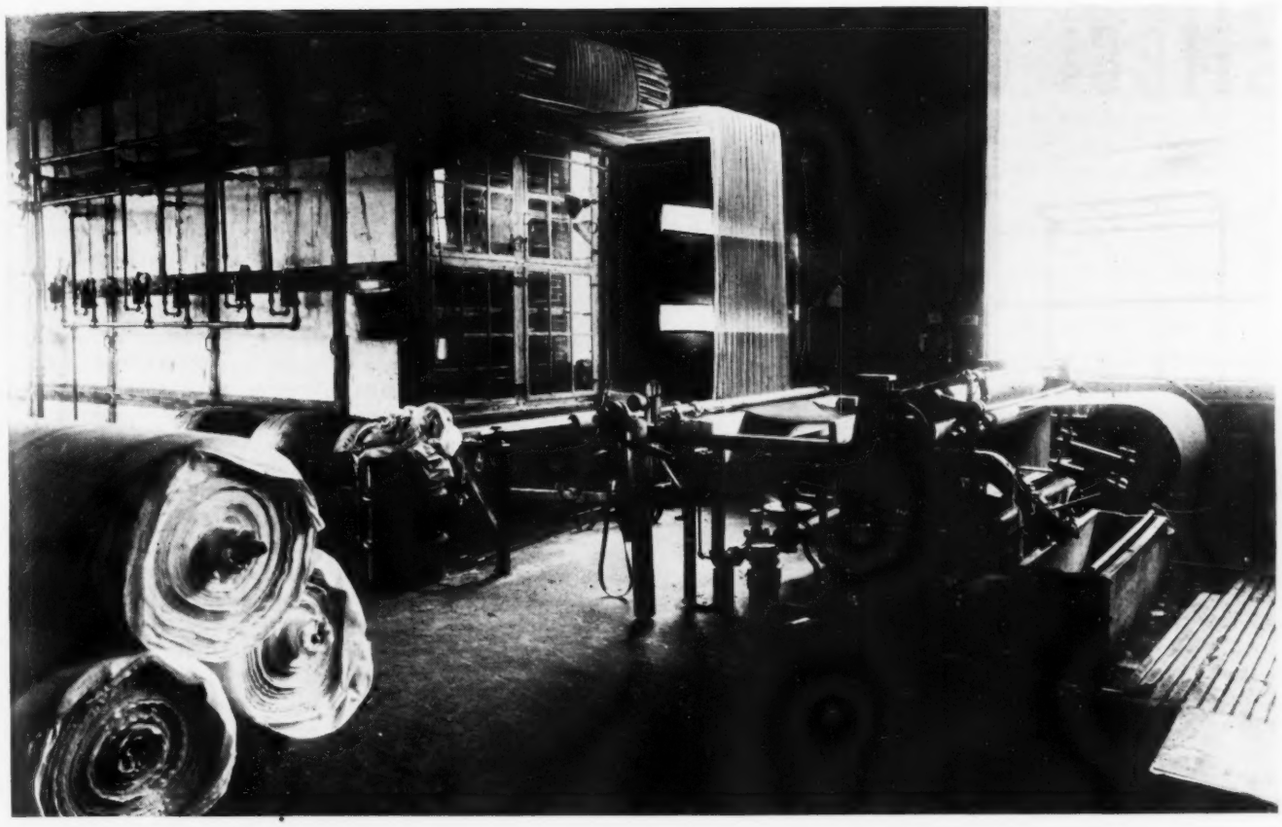
1. A costume for the girl of the future, as Bonnie Cashin, young sports designer, visualizes her. She will have a tunic suit for play and work, permitting plenty of freedom of action. Over it she will wear a coat of fabric of long-enduring quality. The costume is of blue with a coat of red and white, woven of Bemberg yarn.

2. From the fibers of the redwood tree mixed with wool, the blanketing used for this flying suit was made under the direction of the Pacific Lumber Co. Claire McCardell made it for the post-war girl, whom she pictures soaring into the stratosphere warmly clad.

3. For life geared to the speed of air travel, Vera Maxwell develops a triple costume of Celanese. The topcoat is navy Celanese and wool: for the travel dress khaki shirting is used. Under it is a white playsuit of fabric similar to that now used in parachutes.

4. An Aralac pile fabric is made into a "milk-fur" coat, by Helen Cookman who handles it as she would mink. The fur is dyed a deep purple. The dress also of Aralac, is a light lavender, with loose panel back.

5. DuPont's Cordura rayon has been woven into a sheer material of marquisette-like texture. It inspired Kiviette to design this gown of ultra-feminine charm and sophistication for the girl of the future. A layer of black over shell pink gives beauty to the skirt.



Carbomatic gas-fired radiant-heat burners installed in front of dryer increase its output.

Drying Operations Are Speeded Up

At Progressive Silk Finishing Co. by use of gas-fired radiant-heat generators

FACED WITH THE PROBLEM of speeding up drying operations on military and other fabrics, Progressive Silk Finishing Co., Hoboken, N. J., has turned to the use of Carbomatic, gas-fired, radiant-heat generators to increase the capacity of drying equipment already in place. To date the company has installed these gas-burning generators on three different types of equipment and is now planning to extend their applications to other machines. Drying speeds have been increased from 33⅓ to 50% as an average, and in some instances as much as 100%.

The Carbomatic unit consists of a burner having a special refractory surface. As gas is burned over this surface, infra-red rays are produced. No flame is visible. Any type of flammable gas, manufactured or natural, can be employed for generating the rays. Admixture of the gas and air in proper proportions to provide any desired temperature between 125 and 2500°F. is carried out at some distance from the burner to eliminate any danger of explosions. At the Progressive plant, the well-known Kemp system is employed for mixing the gas and air.

If desired, each unit can be individually controlled, thus making it possible to establish several drying zones, each at a different temperature. This is particularly advantageous in such applications as the new pigment-dyeing process, and in crease-resisting and other finishing processes in which synthetic resins are employed, where it is necessary to pre-dry the fabric at a comparatively low temperature, dry at a higher temperature, and cure at a still higher temperature.

One of the advantages of the radiant-heat generator is that it can be installed in conjunction with practically any type of existing drying equipment, and can be placed in any position—vertical, horizontal, or inverted. The accompanying photograph shows two burners placed vertically between a quetsch and a dryer in the Progressive plant. Since this photograph was taken, two more burners have been installed in a horizontal position so that the cloth passes over them immediately after it goes through the nip rolls. Other units have been installed in conjunction with tenter frames and with Palmer machines.

Executives of the company are well pleased with the results obtained from the radiant-heat generators. They state that the greatly increased drying speed more than outweighs the extra cost of the gas required. The units have given no trouble and have proved to be an efficient, and inexpensive means of stepping-up the output of the plant.

Effect of Ageing on Rayon Yarn

Tests show oiling does not injure the strength or stretch or cause oxidation

By CLARENCE B. WEIL

VARIOUS THEORIES have been advanced as to the effect of oil on the strength of rayon yarn during storage. Some people have believed that oxidation takes place in one way or another to result ultimately in the oxidation or hydrolysis of the cellulose. But no authoritative information on the subject has been published. In an effort to determine the effect of time and light on oiled rayon, the author conducted a series of experiments with viscose rayon yarn which had been treated with an emulsion of suphonated oil, a lubricant, a binder, and water. A record of these experiments was reported by the writer in a thesis presented as a part of his course at Lowell Textile Institute. A summary of the test procedure and the results obtained follows.

In order to make rayon yarns more resistant to static electricity, softer and more supple, less sensitive to atmospheric conditions, more compact in that the filaments are held together, and more resistant to abrasion or rupture, it has become common practice, prior to throwing or twisting, to treat yarn with an emulsion. This emulsion as used today is composed of: a sulphonated oil which possesses the proper penetrating power and lubricating properties; a binder consisting of starch or gelatine; a lubricant consisting of a vegetable or mineral oil which does not readily become rancid; and water. Certain compounded oils contain mineral oil plus an emulsifying agent, such as a soap, a sulphonated oil, or a naphthalene sulphonate.

The purpose of these experiments was to determine the effect of time and light on rayon yarn treated with an oil emulsion as compared to the same yarn which was not treated. The characteristics compared were the strength and the stretch of the yarn. On a few skeins, the strength and stretch after boiling off and extracting were compared.

TEXT PROCEDURE. A 600-den., 96-fil., viscose rayon was wound off into skeins of 50 yd. each weighing approximately 3 grams. For oiling the skeins, an emulsion was used consisting of 10% sulphonated castor oil, 5% coconut oil, 3% French sheet gelatine, and 4.2 times as much water as rayon. This was applied in a 1,000-cc. beaker for 15 min. at room temperature. After the time of immersion was completed, the skeins were removed and gently squeezed. To insure some degree of even distribution of emulsion, the skeins were revolved for 5 min. on a wooden dowel. The skeins so treated were put in a room at a controlled relative humidity of 65%, along with an equal number of untreated skeins of the original yarn which were placed in a heavy cardboard box that had previously been left open in the conditioning room.

Tests were made of the yarns on a Schopper single-strand tester of the pendulum type. The strength scale was graduated in grams, and the scale for the stretch graduated in millimeters. A clamp was attached to the lower part of the skein to equalize tension on the yarn.

At definite intervals, one treated skein and one untreated skein which had been exposed to light, and one treated and one untreated which had been kept in the dark, were tested; 25 tests were made on each sample so as to get a representative average. At the end of the tests, one skein of each of the samples was weighed at standard humidity, boiled-off, extracted, washed in hot water then cold water, and dried. Regain of the treated skeins was determined. The dry skeins were then extracted with carbon tetrachloride;

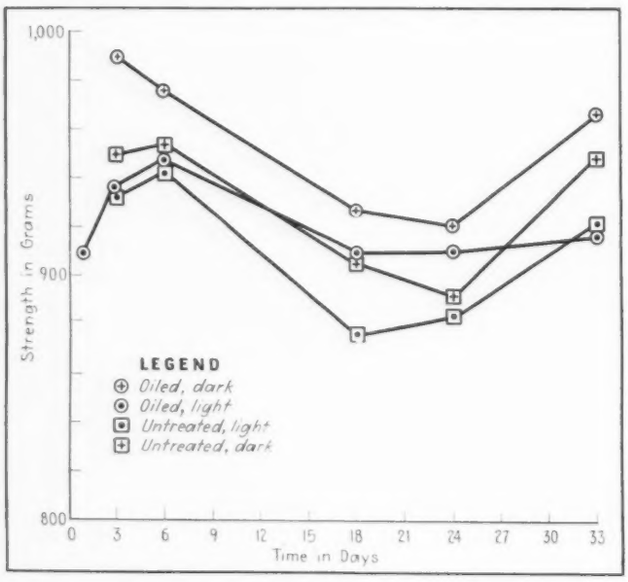


Fig. 1. Chart showing changes in strength over a 33-day test period.

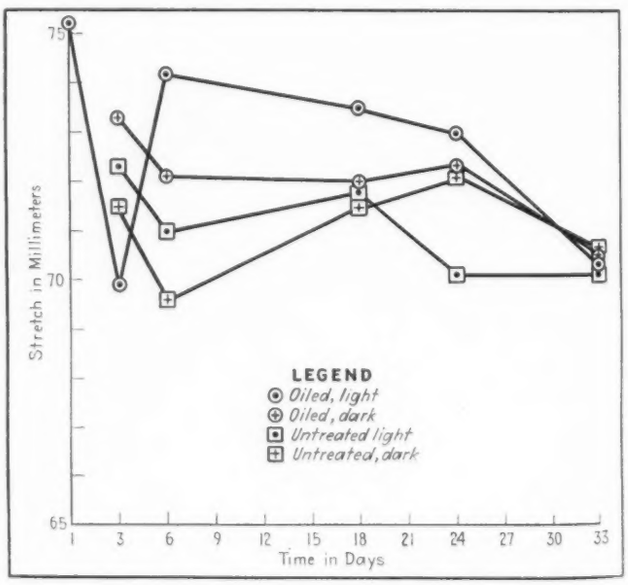
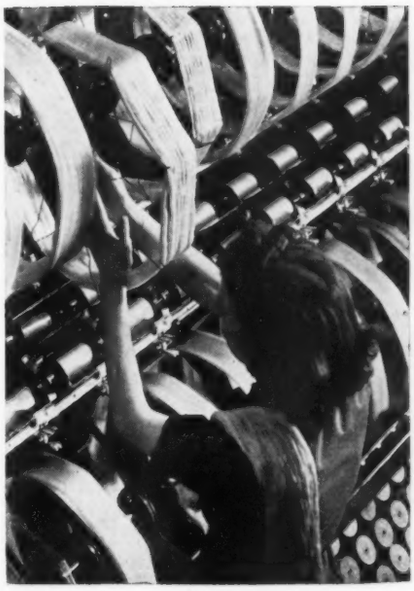


Fig. 2. Chart showing changes in stretch over a 33-day test period.

after 12 runs the skeins were dried, weighed, and tested.

Test conditions were controlled, with the exception of certain variables. First, a change in the scale and pendulum weight of the testing machine was necessary at the start of the 6-day period to secure the maximum readings. Second, the temperature of the room was kept at 70° F. at the start of tests, but the temperature increased because of warmer weather; temperatures ranging from 74 to 90° F. were observed. Due to these variables, the absolute strength and stretch readings become secondary to the relative strength and stretch of each sample as compared to others for the same day. Tests were made at intervals over a period of from 1 to 33 days on treated and untreated skeins exposed to light and those kept in darkness for the stated intervals. Samples were also tested of the treated skeins from which the oil emulsion had been extracted.



Prior to throwing rayon yarn is usually oiled with an emulsion.

TEST RESULTS are summarized in the accompanying table. In general, throughout the testing the strength of the samples which were not exposed to light indicated a consistently higher strength than those exposed to light. Also, yarns which had been treated with emulsion had in general a higher strength and stretch; i.e. the strength and stretch of the treated sample which was not exposed to light was greater than the strength and stretch of the treated sample which was exposed to light. The strength and stretch of the untreated sample which was not exposed to light was greater than the strength and stretch of the untreated sample which was exposed to the light.

Examination of Figs. 1 and 2 at the 3- and 6-day intervals, discloses considerable variation in the strength and stretch. This can be considered to be due to the fact that during this period the oil is distributing itself more evenly throughout the sample. This is borne out somewhat on the examination of the 6-day period, when the strength of the samples appears to be moving toward a point, and also the fact that the standard error is decreasing in the case of the stretch and strength. At the next interval of testing, 18 days, the temperature was 85 to 87°F. This is reflected in the strength by a general downward trend in the case of all the samples more or less at the same speed. On the other hand, the stretch readings increased in the case of the untreated samples and remained fairly constant in the case of the treated samples; in general, they appear to be moving toward a point. At the 24-day interval, the same is true as was of the 18-day period. In the case of the stretch of the untreated sample exposed to the light, a decrease was obtained, but this might have been due to some other condition, since the trend still continues toward a point. At the last period of testing, 33 days, there was a general upward trend in strength. But this appears in pairs. The samples which had been exposed to the light meet at a point, whereas those kept in the dark appear to be moving toward another point which is higher. In the case of the stretch, all the samples appear at one point.

Characteristics of the boiled-off and extracted samples appear further to support those trends which appear clearly at the last period of testing—33 days. Although there is no real difference in the stretch of any of the samples, there is a real difference between the strength of those kept in the light, and those kept in the dark, whereas there is no real difference in the treated and untreated skeins of the samples exposed to light and those not exposed to light.

FROM THE RESULTS, it can readily be seen that the emulsion increases the strength and stretch of the yarn as compared to that of the untreated for a period of approximately one month, when the strength and stretch of both become practically the same. When the emulsion is removed, the strength and stretch of the treated yarn is the same as the untreated. This shows that in no way does the oil affect the rayon itself and that the effect of light on a treated sample is the same as it would be on a sample that was not treated if both are exposed for the same length of time.

After 33 days of various treatments, some in the dark, some in the light, some untreated, and some treated with the emulsion, boiling-off and extracting gave values practically the same as the original sample of rayon. This shows that whatever changes in the strength and stretch take place during the ageing are due to the effect of time and light on the emulsion on the rayon. Also, this indicates that one can pick whatever materials are desired or use any proportion of the materials desired in the emulsion to give the properties that are desired without regard as to what effect they will have on the rayon, since the emulsion will be removed and the rayon will resume its original properties.

Effect of time and light on strength and stretch of rayon yarn.

Time in Days		Oiled Skeins				Untreated Skeins			
		Kept in Dark		*Kept in Light*		*Kept in Dark*		*Kept in Light*	
		Strength	*Stretch*	*Strength*	*Stretch*	*Strength*	*Stretch*	*Strength*	*Stretch*
Extracted	0	...	....	...	....	...	....	869	62.9
	1	905	66.3	909	75.2	866	62.5	...	....
	3	989	73.3	937	69.9	949	71.5	933	72.3
	6	978	72.1	947	74.2	953	69.6	942	71.0
	18	927	72.0	909	73.5	907	71.5	876	71.9
	24	921	72.3	910	73.0	892	72.1	884	70.1
	33	966	70.4	917	70.3	948	70.5	920	70.2
Boiled-off and extracted	33	847	67.8	828	66.7	849	66.4	826	67.6

Chemical Modification of Wool

Results in fibers which are resistant to damage by moths, alkali, and acid

The tendency of wool to be eaten by moths and to be damaged by laundering can be considerably diminished by a process developed by research associates of the Textile Foundation at the National Bureau of Standards. Details of the process and the results obtained are given in the following abstract of a report by Walton B. Geiger, F. F. Kobayashi, and Milton Harris. The complete report, which will appear in current issues of the *Journal of Industrial & Engineering Chemistry* and in *Textile Research*, contains additional data on the experimental procedure.

IMPROVEMENT IN THE PROPERTIES of wool can be effected by chemical processes which transform the unstable disulphide groups in the wool fiber to more stable groups. Wool so modified should be advantageous for use in manufacture of apparel fabrics, blankets, carpets, and certain industrial fabrics—such as papermakers' felt—which are exposed to harmful chemicals. The series of chemical reactions developed by research associates of the Textile Foundation at the National Bureau of Standards results in a modified wool having improved resistance to damage by the above-mentioned agencies.

The disulphide groups can be thought of as short cross-links which connect the longer peptide chains of the wool fiber. Fundamentally, the process consists of treating the wool with a chemical which reduces the disulphide groups to sulphhydryl groups without destroying its fibrous structure, and then treating with an alkylating agent which reacts with the sulphhydryl groups to form new *bis*-thioether cross-links that are more stable than were the original disulphide groups. Recently a number of improvements have been made in the original process for preparing modified wool. One of these is the use of calcium thioglycolate, instead of sodium thioglycolate, as the reducing agent.

Reduction is carried out by immersing the wool in a 0.03N solution of calcium thioglycolate at 50°C. and pH5 for 2 hr. The wool is then washed with water, then with a 0.01N phosphate buffer at pH8, and again with water. It is then immersed for 2 hr. in a 0.1N solution of phosphate buffer at 50°C. and pH8 in which an alkylating agent has been suspended with the aid of a cationic wetting agent. Of the several alkylating agents tried, trimethylene bromide proved to be one of the best. About 0.0005 mol. of the alkylating agent is required for each gram of wool. This treatment reduces the cystine content of the wool from about 12.2% to 6.5%. The cystine content can be reduced to 4% by repeating the treatment, and to 2% by applying the treatment four times.

THE ACTION OF ALKALI on unmodified wool may diminish its strength and durability, cause it to turn yellow, and make it harsh. That the action is less severe on modified wool is illustrated by the photomicrographs in Fig. 1.

Three tests for resistance of wool toward alkali are: (1) alkali-solubility, (2) the extent of yellowing of the products by alkali, and (3) the effect of alkali on the breaking strength of strips of cloth. The alkali-solubilities given in Table I show that the modified wools have a decidedly greater resistance than does untreated wool.

Treatment with boiling solutions of sodium carbonate, which rapidly turns untreated wool yellow, has considerably less effect upon the modified wools, as the reflectance data of Table I indicate. The effect of treatment with boiling solutions of sodium carbonate on the breaking strengths of strips of wool cloth is also shown in Table I. Loss in breaking strength of the chemically modified wools upon treatment with sodium carbonate was somewhat less than that of the untreated wool.

Not only do the modified wools show

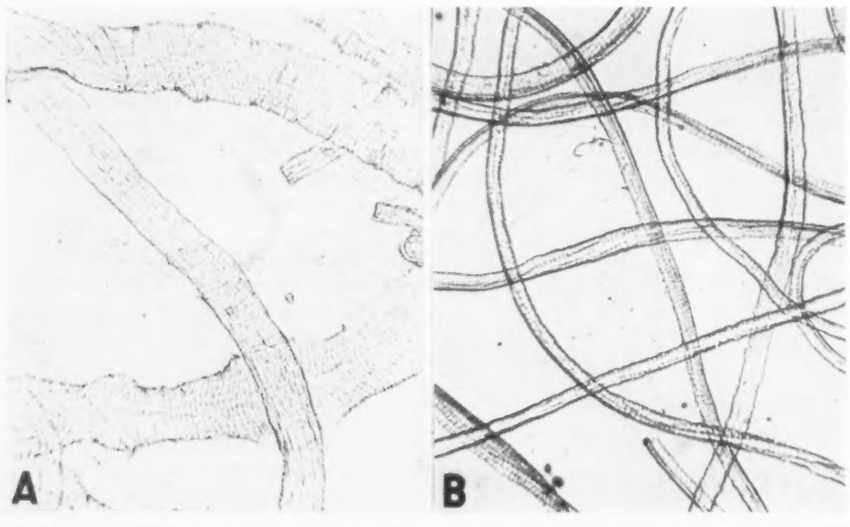


Fig. 1. Wool fibers after treatment for 30 min. at 100°C. with 0.01 N NaOH. A, untreated wool; B, modified wool.

Table I.

Effect of boiling for 1 hr. with 0.02N sodium carbonate on alkali solubility, reflectance, and breaking strength of untreated and modified wools.

			Breaking strength	
% Cystine	*Alkali-solubility %*	*% Reflectance*	*Before treatment with Na_2CO_3 kg*	*After treatment with Na_2CO_3 kg*
		UNTREATED		
12.2	10.0	37.8	11.0	10.0
		MODIFIED		
10.0	6.2	37.6	13.5	11.5
6.5	2.9	41.0	13.5	12.0
4.0	2.5	46.5	12.5	12.0
2.0	2.0	47.5	12.5	11.5

Table II.

Effect of acids on alkali solubility of untreated and modified wools.

Conditions	*Alkali-solubility*	
	Before treatment	*After treatment*
UNTREATED HCl, 0.1N, 65°C, 24 hr.	9.5	20.0
MODIFIED HCl, 0.1N, 65°C, 24 hr.	2.5	6.3
UNTREATED HCl, 0.1N, 65°C, 10 days	9.5	80.0
MODIFIED HCl, 0.1N, 65°C, 10 days	2.5	45.0
UNTREATED H_2SO_4, 0.1N, 65°C, 24 hr.	9.5	28.8
MODIFIED H_2SO_4, 0.1N, 65°C, 24 hr.	2.5	9.9

Table III.

Effect of carbonizing with sulphuric acid on alkali solubility and breaking strength of untreated and modified wools.

	Alkali-solubility		*Breaking strength*	
	Before carbonizing	*After carbonizing*	*Before carbonizing*	*After carbonizing*
	%	%	kg	kg
UNTREATED	9.5	19.4	13.5	13.5
MODIFIED	3.5	11.0	13.0	13.0

Table IV.

Effect of reducing agents on alkali solubility of untreated and modified wools.

Reagent	*Conditions*	*Alkali-solubility*	
		Untreated %	*Modified* %
None		10.0	2.5
$NaHSO_3$	1% 100°C 1 hr.	15.2	4.8
$Na_2S_2O_4$	10% 50°C 2 hr.	39.0	4.5
Na_2SO_2—CH_2O	5% 50°C 2 hr.	13.3	3.7
NaSH	0.2N 50°C 2 hr.	41.5	3.2

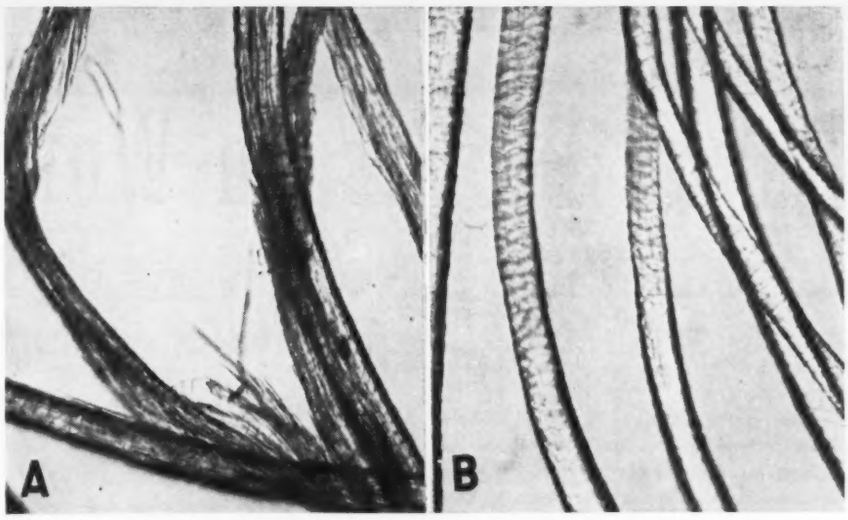


Fig. 2. Wool fibers after treatment with pepsin for 2 weeks. A, untreated wool; B, modified wool.

improved stability to alkali alone, but they also show greater stability to alkali after being treated with acids. Improved stability to such a succession of treatments is important because degradation which may occur when wool is carbonized, acid-dyed, or acid-fulled may be greatly accentuated when the material later comes in contact with alkali, and in laundering. Table II illustrates typical results. Carbonizing of wool with sulphuric acid differs from the above treatments in involving baking at a high-temperature (about 125°C.). The results obtained on subjecting untreated and modified wools to a typical commercial carbonizing process are recorded in Table III. The untreated wool, after carbonizing had a high alkali-solubility, so damage might easily result from laundering or other treatments involving alkali. The alkali-solubility of the modified wool after carbonizing had increased too, but the final value was much lower.

RESISTANCE TO REDUCING AGENTS of untreated and modified wool is shown in Table IV. The modified wool was found to be considerably less affected by each of the reducing treatments tried. Effect of certain chemical oxidixing agents is shown in Table V. Although the alkali-solubilities of both the modified and untreated wools have increased, those of the modified wools remain low enough to indicate considerable resistance to the alkali.

Modified wools showed greatly enhanced resistance to digestion by proteolytic enzymes and were not attacked by pepsin even after mechanical injury, or after treatments with acid sufficient to render untreated wool readily digestible. Photomicrographs illustrating the experimental results are shown in Fig. 2.

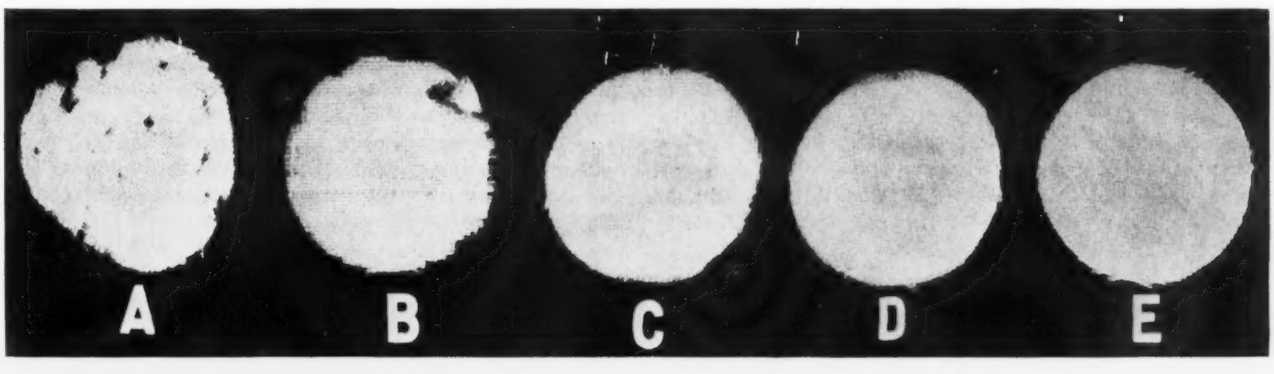
Moth larvae can digest wool only after breaking its disulfide cross-linkages by the action of a reducing agent present in their intestinal tracts. For this reason, wools containing *bis*-thioether linkages are far more resistant to damage by moths. This increased resistance is illustrated in Fig. 3.

Table V

Effect of oxidizing agents on alkali solubility of untreated and modified wools.

Reagent	*Conditions*	*Alkali-solubility*	
		Untreated %	*Modified* %
None		10.0	2.5
Cl_2	0.01N, 100°C., 1 hr.	13.6	6.6
H_2O_2	2 vol., 50°C., 1 hr.	15.5	4.0
$KMnO_4$	1%, 35°C., 1 min.	17.5	10.4
$K_2Cr_2O_7$	0.2%, 100°C., 1 hr.	11.0	4.6

Fig. 3. Wool samples after subjection to moth larvae: A, untreated wool; B, C, D, and E, modified wools containing 10, 6.5, 4, and 2% cystine, respectively.



Rayon Blends on Worsted System

Modifications needed in drawing and spinning operations for all-wool yarns

Carding and combing of rayon staple fiber, finisher gilling, and the mechanics of blending rayon top with wool top were discussed in the first two articles of this series which appeared in September and October issues. This concluding installment deals with the characteristics of fibers to be blended and with the drawing and spinning operations. The author has had a wide experience in the textile industry and is now head of the worsted division, sales service department, of American Viscose Corp.

By ROBERT A. SMITH

THE ULTIMATE OBJECTIVE in blending rayon staple and wool is to produce a thorough blend that will spin a yarn of even diameter. This achievement is believed to be a function of the relative lengths of the rayon and the wool fibers. The touch, or hand, in the finished fabric is a function of the wool grade and the diameter, or denier, of the rayon fiber.

First, let us theorize on relative lengths. It is our *belief* at the Textile Unit that the length of the rayon staple fiber should exceed the length of the longest wool fibers. We are now attempting to prove or disprove this theory, but the weight of evidence leans toward proving it to be true. During the last three months several instances have come to our attention in which mills have had identical difficulties when using rayon staple fiber which was shorter than the wool. In one case a mill sent its wool top and rayon top to our Textile Unit and we produced the same kind of uneven yarn that they experienced. It is instances such as these which cause us to hope our theory will provoke enough discussion to lead to a solution.

The theory of relative lengths is based on an understanding of the physical differences between wool and rayon. In the present connection the most important characteristic of a wool fiber is its crimp. This gives it the ability to contract when released from tension. Since this crimp is somewhat spiral in form the fiber is imbued with the ability to engage neighboring fibers while contracting. Rayon fibers, however, possess no appreciable crimp and are more susceptible to static than wool. This makes them more difficult to control in drafting unless this tendency is taken into consideration.

In any blend the longest fibers determine the roll settings, or ratch. In rayon staple fiber the length is "made to order" and every fiber is a predetermined length, with a close plus or minus tolerance. If the length of the rayon staple exceeds the length of the wool staple, roll settings can be closely set to discipline the rayon content. An added advantage in this practice is the fact that changes of roll settings will be rare, unless the length of the rayon is changed. The length of the wool content is just as variable as it would be in an all wool sliver; hence, the carriers must be depended upon to perform their usual function of disciplining the shorter wool fibers.

Someone will ask the question, "What difference does it make whether the carriers are called upon to control shorter wool fibers or shorter rayon fibers?" It already has been mentioned that wool has more crimp and that rayon is more electro-static. In addition rayon is a smoother fiber. These facts combine to make short wool fibers more able to take care of themselves during their passage from the back rolls to the front rolls. We feel that the crimp of wool gives the short fibers the ability to take hold of surrounding fibers and remain under control, whereas a static condition might tend to cause short rayon fibers to "become wild."

To secure the proper hand in a fabric, the diameter of staple fiber is important. The denier, which regulates the diameter of rayon, is another "made to order" feature. At present two sizes of viscose staple fiber are offered that are suitable for the worsted trade. The most popular size is 5.5-den., followed by the finer 3-den.; 5.5-den. rayon is in the range of half-blood wools. 3-den. is finer and would be over a hypothetical grade of 85s to 90s wool. This indicates why 5.5-den. rayon is the most widely used.

There are many individual opinions regarding the use of either size in combination with the same grade of wool. In men's wear the 5.5-den. will give the firm hand that is desired. In fine yarn counts for women's wear the smaller diameter of 3-den. will aid the spin, but the touch will be more "mushy" unless the twist is increased to counteract that effect. Naturally, the features of certain fabrics do not call for extra twist; therefore 3-den. proves undesirable because of its lack of wiriness. For blending with practically all grades of wool, 5.5-den. is gaining popularity over 3-den. A count of 1/36s is very easily spun with a 50/50 blend of 64s wool and 5.5-den., 5-in. rayon, and with care 1/48s can be made. It may be of interest to note that 1/45s has been spun from 100% 5.5-den. 5-in. rayon staple.

DRAWING AND SPINNING. As noted previously can gill-boxes are not favored for the processing of rayon/wool blends. Therefore, the first step after blending is the two-spindle gill. Our specifications at the Textile Unit for this machine follow:

Pins per inch (No. 17 wire; 0.056 in.)	14 (single row)
Pitch of fallers	7/8 in.
Drops per minute	420
Usual draft	5½ to 6 in.

This is the first operation in which actual twist is inserted, and a word of caution is needed. In the section on blending it was indicated that we prefer to set our ratches in drawing and spinning in accordance with the length of the rayon staple. Also, as will be discussed later, we prefer to set them closer than is customary on 100% wool. Therefore, with closely set ratches, the right amount of twist is doubly important. A wool sliver behaves differently from a rayon sliver under the influence of twist, and this tendency is proportionally true in blends. Wool slivers will accept a broader range of twist than rayon and still draft satisfactorily. This means that in handling rayon blends, a twist a little on the tight side will bind, causing tight ends; on the other hand, twist a little on the loose side will slip and unevenness will result. No rule can be given to determine the exact amount, but it has been found that the prevailing error is to use too much twist. Insert just enough to turn the spool in the following creel, and no more. This applies all the way through the drawing.

WORSTED DRAWING AND SPINNING DEPARTMENT — Data

Blending Specifications — Order Number

50% 5.5 denier 5" dull — Top weight 3.6 oz. per 5 yards or 320 grains per yard
50% Wool 64's quality — " " 3.6 " " " " " 320 " " "
% — " " " " " " " " " " "
% For blending---see bottom of sheet. — " " " " " " " " " " "
% — " " " " " " " " " " "

	Pins Per Inch	Drops Per Min.	Ratch	RPM Front Roll	RPM Spindle	Draft Pin Draft	Draft Total Draft	Draft Gear	Draft Constant	Twist Gear	Twist Constant	Twist TPI	Ends Fed Per Spindle	Grains Per Yard Delivered	Prod. Per Spindle Hour	
2 Spindle Gill	14	420	11½"			None	6						4	142		

	Roll Settings in Inches: Carriers 1st	2nd	3rd	Back Roll	RPM Front Roll	RPM Spindle	Draft Theor.	Draft Actual	Draft Gear	Draft Constant	Twist Gear	Twist Constant	Twist TPI	Ends Fed Per Spindle	Grains Per Yard Delivered	Prod. Per Spindle Hour	
2 Spindle Draw				6 3/8			6						.21	4	95		
4 Spindle Draw				6 1/8			6						.3	4	63		
6 Spindle Draw				5 7/8			6						.4	4	42		
8 Spindle Finisher				5 5/8			6						.7	3	21		
12 Spindle Finisher				5 1/2			6						1.1	2	7		

	Roll Settings in Inches: Carriers 1st	2nd	3rd	Back Roll	RPM Front Roll	RPM Spindle	Draft Theor.	Draft Actual	Draft Gear	Draft Constant	Twist Gear	Twist Constant	Twist TPI	Twist S/Z	Ends Fed Per Spindle	Ring Size	Traveler Size	Grains Del. Per Yd.	Yarn Count
30 Spindle Ring Rover				5 3/8		1525	6						2.4		2	3.5"	8gr.	2.34	
48 Spindle Ring Spinner				5 1/4		5200	6						14	Z	1	3"	#23		1/32's

	Roll Settings in Inches: Carriers 1st	2nd	3rd	Back Roll	RPM Front Roll	RPM Spindle	Draft Theor.	Draft Actual	Draft Gear	Draft Constant	Twist Gear	Twist Constant	Twist TPI	Twist S/Z	Ends Fed Per Spindle	Ring Size	Washer Size	Grains Del. Per Yd.	Yarn Count
8 Spindle Flyer Rover																			

	Roll Settings in Inches: Carriers 1st	2nd	3rd	Back Roll	RPM Front Roll	RPM Spindle	Draft Theor.	Draft Actual	Draft Gear	Draft Constant	Twist Gear	Twist Constant	Twist TPI	Twist S/Z	Ends Fed Per Spindle	Ring Size	Type Cap	Grains Del. Per Yd.	Yarn Count
8 Spindle Cap Spinner																			

Data for Twisting:

General Comments: Blend started in double-head gill. Feed:- 2 wool and 2 rayon slivers
Draft 6. Delivered end:- 213 grains per yard.

Fig. 3. Organization chart for 50-50 blend of 5.5-den., 5-in. rayon staple fiber and 64s quality wool.

There is a recommendation concerning tensions which is also applicable all the way through drawing and spinning. Use the smallest felt washers and the lightest travelers that will do the work. A tightly wound spool increases the compactness, making drafting more difficult, thereby causing the final extensibility of the yarn to suffer. By decreasing tensions and making soft spools and bobbins, yarn extensibilities have shown an increase of 2 to 4%.

The different stages of drawing are so similar that a machine-by-machine description is not necessary. The organization chart given in Fig. 3 shows that we have not tried to install a "balanced set of drawing"; however, all the operations are covered and the pertinent facts listed. Doublings, drafts, ratches, and delivered weight are indicated.

All the draw frames listed above are regular Bradford equipment found in any worsted mill. In fact they are all second-hand machines that were purchased from a worsted mill. We reconditioned them ourselves, but added nothing in the way of refinements. This fact should be assurance that rayon and rayon blend yarns can be processed on the machinery found in practically all worsted yarn mills.

BRADFORD SPINNING. There are no limitations on the general types of spinning frames which can be used for spinning rayon-worsted yarns or even 100% straight rayon yarns. Bradford or French systems may be employed; and under the Bradford system, ring, flyer, or cap frames are suitable. Naturally, yarn produced on any one of the three Bradford frames has different characteristics. The most noticeable of these differences is that the yarn from a cap frame is much more hairy than that from a ring frame. This is just as true when there is a rayon content in the yarn. From our experiences so far, we find that yarn spun on a ring frame is slightly stronger than the same yarn spun on a cap frame. This difference in strength is not sufficient, however, to be detrimental to the cap spun yarn.

Generally speaking, in spinning rayon-worsted yarns on a ring spinning frame, it is not necessary to make any drastic changes in the normal spinning procedure. As has been previously noted in reference to the drawing operations, the ratch is set fairly close to the staple length of the rayon, and we prefer to keep the rayon staple the longest component of the blend. It will be noted from the work sheet that in the case of a blend containing 5-in. rayon staple fiber, the spinning ratch is 5¼ in.

One line of carriers has been removed, but the remaining two are run at the same speeds and in the

(*Continued on page 81*)

Control of Spinning Room Labor

Flexible system helps overseer to keep within his budget and meet standards

Indirect labor cost eludes many overseers who otherwise can maintain a low cost. Indirect labor often has no standard other than to have a full job, and few overseers know how to curtail the indirect payroll. Use of a chart similar to the one illustrated in this article can give the overseer the assurance of knowing how he stands on indirect cost and just how to curtail his indirect payroll.

By CLARENCE McELROY and MARCUS GROSS

SPINNING ROOM COST STANDARDS are necessary in order to control expenses intelligently. When spindles are not running, production drops and the reduction of labor costs becomes mandatory. Control of costs must be flexible and reasonable. Close control of efficiency and cost cannot be maintained if a retrenchment is made every time several hundred spindles are idle a few hours for changes. Department efficiency would be seriously impaired. The overseer of spinning must, of necessity, be thoroughly familiar with his costs. His budget being fixed, he must tax his ingenuity to meet cost standards. Therefore, indirect labor, that portion of labor that is known as day-labor, must be rigidly controlled so that it does not fluctuate dangerously.

There are, of course many systems of controlling indirect labor. The authors have devised a double check on costs by including in their cost schedule definite percentage ratings of indirect labor costs in relation to the total departmental expenses of each job to the total departmental cost and the cost per spindle from 1 to 40 hr. Thus an overseer can estimate quickly just how many people to send out, who they should be, and just how close he comes to meeting his standard cost.

Any overseer can devise such a schedule to suit his departmental needs by first tabulating his indirect labor costs and then calculating the "Percentage of Total Cost" and "Cost per Spindle" data. The cost-per-spindle data are the standard. Use of a chart similar to the one illustrated will aid the overseer in meeting these standards. In this chart care has been taken to classify the indirect workers according

Indirect Labor Control Chart—Spinning Department

BASIS: 20,000 SPINDLES, 3 40-HR. SHIFTS

Indirect Labor	*First Shift*		*Second Shift*		*Third Shift*		*Classification*
	Weekly Wages	*Percentage of Total Cost*	*Weekly Wages*	*Percentage of Total Cost*	*Weekly Wages*	*Percentage of Total Cost*	
Second Hand	$35 (1)	13.5%	$35 (1)	20.6%	$35 (1)	22.9%	Skilled
Third Hand	$27 (1)	10.4%	—	—	—	—	Skilled
Section Hand	$25 (1)	9.6%	$50 (2)	29.4%	$50 (2)	32.7%	Skilled
Spindle Setter	$52 (2)	20.0%	—	—	—	—	Skilled
Oilers	$36 (2)	14.0%	—	—	—	—	Semi-Skilled
Cleaners	$34 (2)	13.0%	$34 (2)	20.0%	$17 (1)	11.1%	Unskilled
Roving Hands	$34 (2)	13.0%	$34 (2)	20.0%	$34 (2)	22.2%	Unskilled
Yarn Hands	$17 (1)	6.5%	$17 (1)	10.0%	$17 (1)	11.1%	Unskilled
Total Cost 40 hr.	$260	100%	$170	100%	$153	100%	

Hours	*Cost per Spindle*	*Cost per Spindle*	*Cost per Spindle*	*Standards*
1	.000325¢	.0002125¢	.00019125¢	
2	.000650¢	.0004250¢	.00038250¢	FIRST SHIFT Indirect Labor—$260 Cost per Spindle 40 Hr. 0.013¢
3	.000975¢	.0006375¢	.00057375¢	
4	.001300¢	.0008500¢	.00076500¢	
5	.001625¢	.0010625¢	.00095625¢	
6	.001950¢	.0012750¢	.00114750¢	SECOND SHIFT Indirect Labor—$170 Cost per Spindle 40 hr. 0.0085¢
7	.002275¢	.0014875¢	.00133875¢	
8	.002600¢	.0017000¢	.00153000¢	
9	.002925¢	.0019125¢	.00172125¢	
10	.003250¢	.0021250¢	.00191250¢	THIRD SHIFT Indirect Labor—$153 Cost per Spindle 40 hr. 0.00765¢
20	.006500¢	.0042500¢	.00382500¢	
30	.009750¢	.0063750¢	.00573750¢	
40	.013000¢	.0085000¢	.00765000¢	Total Indirect Employees 27

to their job and skill. When retrenchments are necessary, such a classification is of value in determining the adjustments in costs. The schedule also serves as a check against overloaded payrolls.

THE KEY to the chart is as follows: In the first column under Indirect Labor the jobs are listed. In the second column, headed Weekly Wages, are listed the total first-shift weekly wages for each job. The figures in parenthesis in the second column denote number of workers on that particular job. In the third column, Percentage of Total Cost, are listed the percentages of each wage to the total cost of that particular shift. In the lower half of the chart Costs Per Spindle data are extended in range from 1 to 40 hr.

Suppose for example that 10 frames of 240 spindles are to be idle 20 hr. on the first shift. If no retrenchment is made, the cost per spindle will rise above the standard, of 0.013¢ for 40 hr. Under Cost Per Spindle opposite 20 hr. we find 0.0065¢. Multiplied by the 2400 spindles that are to be idle 20 hours we have 2400 x 0.0065 = $15.60. A reduction of this amount must be made in the payroll to stay within the standard. The retrenchment, of course, would naturally start with unskilled labor, as listed in the last column of the chart.

The percentage to be deducted can be double-checked as follows: Total cost, $260 divided into $15.60 equals 6%. A glance at the schedule will reveal that the most logical place to retrench would be with the yarn hand, but as the stoppage is for only 20 hr. the saving would not equal $15.60. Therefore, one cleaner and one yarn hand should be transferred from this department to one that is under-manned, or should be laid off. The saving by this retrenchment is slightly in favor of the company. Oilers and roving hands, having less to do, must double-up during this period.

What has this done to the cost per spindle standard? The total spindles running during this period will be 17,600, and for the remainder of the shift 20,000. Average spindles running for the full shift will be 17,600 + 20,000 ÷ 2 = 18,800. Actual cost for the shift will be $243; actual savings, $17. Divide $243 by 18,000 to get a cost of 0.0129¢ per spindle. The cost per spindle is slightly below the standard of 0.013¢ per spindle. If only $15.60 was deducted, then $244.40 divided by 18,800 spindles would exactly equal the standard cost.

In addition to above methods, another check can be made where a number of stops occur in the weekly work period. Figure the final indirect labor costs and divide by cost per run. As an example, suppose 2,000 spindles stopped 4 hr., 1,000 spindles stopped 9 hr., and 500 spindles stopped 6 hr. The total costs for these stoppages would be $6.50. If no other stops are made during the week, the final indirect labor cost is $253.50. Divide this total by 0.013¢ to get the average spindles run. In this instance, it would be 19,500 for the week. If no savings are made during these short stoppages, then divide total labor costs, $260 by 19,500 spindles for actual cost per spindle. This cost will be found to be slightly higher than standard.

Rayon Blends on the Worsted System

(*Continued from page* 79)

same locations as would be true for an all-worsted yarn.

DRAFT. The presence of the rayon content makes it possible to increase the drafts slightly. It is well known that the draft that can be employed with any lot of wool varies with the grade and the length of staple. This also applies when rayon is blended with these various wools.

To spin even yarn it has been found that the wool content is the limiting factor with regard to high drafts. We have often spun even yarn containing 100% 5.5-den., 5-in. rayon staple using a spinning draft of 14. To get equal evenness in a blend of 5.5-den., 5-in. rayon and 64s wool, we seldom exceed a draft of 6½ or 7. In spinner's language the rule for a 50/50 blend would be something like this: "Never exceed a draft of 2 over the length of the wool staple." Example: wool 4 in.; draft 6. Although this is a little greater than the worsted rule of "one over the staple length," it is not nearly comparable with what can be done with straight rayon. The writer wishes to emphasize the fact that the increase in draft is not directly proportional to the increase in rayon content. The presence of any wool in the blend acts as a limiting factor; this is pointed out so that caution will be used when attempting to increase drafts.

SPINNING SPEEDS AND FLY. The question of fly is of great importance to every worsted man. The control of the amount of fly starts back in the blending and is influenced by the speeds and the drafts employed all through drawing. Humidity control is also a great help.

If there is no humidity control, oiling of the wool top prior to blending is indicated. With humidity control, this additional oiling is not always necessary. A temperature of 78° F. and a relative humidity of 60 to 65% are satisfactory.

In drawing, a wild sliver and roving result if drafts are too high or speeds are too great.

Spinning speeds are tied up with the count of yarn, turns of twist, and weight of traveler. There is no set rule for solving these variables, but the result should be based on spinning with as little tension as possible on the yarn. The tension should be just sufficient to control the balloon and prevent excessive beating against the dividers. This factor is important, since it helps to maintain a higher degree of extensibility in the final yarn. A study of the work sheet will show that on 1/32s with 14 turns of twist and a No. 23 traveler, we maintained a speed of 5,200 r.p.m. This produced 1.38 lb. per 40 spindle hours at 100% efficiency.

By following the above specifications, we obtained only a very small amount of fly. We feel that it was small enough to be controlled in a mill also running all-worsted goods. One would expect normal care to be exercised in cleaning frames and floors. A distinctive tint to identify roving with a rayon content is sometimes employed, but the complete segregation of drawing and spinning machinery is not necessary.

In conclusion, it is advisable to dwell a moment on the future. None of us knows what the future will hold, but it is this uncertainty that makes investigation of any new development highly important. The tempo of war-time activity demands that all of us make time count. Complete cooperation, the avoidance of duplicated efforts, and an exchange of information are the surest means of getting results. This article is written in that spirit of cooperation. We know that development by the rayon producers is continuing, but it is the worsted mills that must prepare themselves for the benefits of this research.

Four-Year Record Is in the Bag

Nine months textile output means a new record in 1942—But what's ahead?

By DOUGLAS G. WOOLF

THE YEAR IS IN THE BAG. It is now certain that 1942 will set the fourth successive high record in domestic textile production. TEXTILE WORLD's index of mill activity stands at 200 (on the basis of 1923-25 as 100) for the first nine months of this year, as compared with 188 for the calendar year 1941, 142 in 1940, and 132 in 1939.

It is significant to compare the performance of those last four years with that of the preceding decade, 1929 to 1938 inclusive, when the index moved within a comparatively narrow range from the low of 83 in 1932 to the high of 125 in 1937. (See Table I.) Putting it another way, the index averaged 103 during the decade from 1929 to 1938, and averaged 164 during the succeeding four years—a gain of nearly 66⅔%.

By individual fibers, cotton consumption during the first nine months of 1942 was 9% above the same period of 1941; wool was approximately unchanged; filament rayon was 4% up, staple rayon 11% up, and all rayon 6% up.

WHAT LIES AHEAD is the more interesting part of this story. How long can a production schedule twice as heavy as the so-called "normal" of the 1923-25 average be warranted?

There are two schools of thought on this point in the industry today. One group believes there is no prospect, at least during the war, of failure to absorb just as much goods as can be made from available materials on existing machinery. The other group feels that a decline from present levels is inevitable.

Table I—TEXTILE WORLD'S Textile Mill Activity Index

1923-25 average = 100

1929	115	1936	124
1930	89	1937	125
1931	93	1938	103
1932	83	1939	132
1933	104	1940	142
1934	90	1941	188
1935	105	1942 (*9 mos.*)	200

The principal variable in the calculations of the two groups is of course the ultimate size of the Army. Another unknown, in procurement, is the extent of Lend-Lease demand.

Against the belief of the optimistic school that Army and Lend-Lease together will continue to tax the textile industry's capacity to the utmost, the opposite group feels that 1943 will witness a slackening in the total requirements from these two sources—and that even if Lend-Lease demand should increase. Army purchasing will probably fall off.

So far the only tangible support for the latter theory is the statement by Col. Robert C. Brady, commanding officer of the Philadelphia QM Depot, that it is not believed the Army worsted requirements for the first part of 1943 will be sufficient to enable the industry to maintain the present operating schedule. But isolated though that particular incident is, and limited to one branch of the textile industry—worsteds, nevertheless it is pointed out by some observers as symptomatic.

The pessimistic school believes also that the prospect of taking up by civilian sales whatever slack might develop from decreased Army purchases has been over-played. This group feels that the new tax law, and the additional taxes to be enacted shortly, plus the drain from bond-buying, and the unemployment in some quarters resulting from shut-downs of non-essential industries and services, will all tend toward a decline in national purchasing-power which is at present at its peak.

At the moment, most of the evidence seems to be on the side of the optimists. However, it is entirely possible that, as time goes on, there will be a trend in the other direction. This does not mean anything resembling a collapse. Nor does it mean that present schedules should be reduced, so long as an *actual* demand for the present record production continues. But it is good to be prepared for whatever may happen.

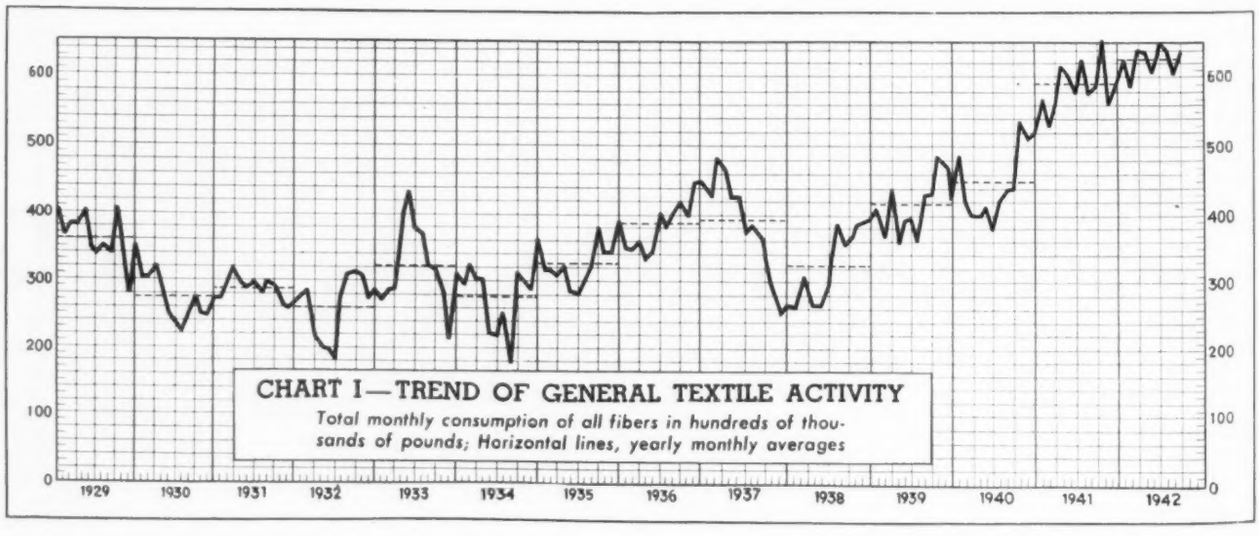


CHART I—TREND OF GENERAL TEXTILE ACTIVITY

Total monthly consumption of all fibers in hundreds of thousands of pounds; Horizontal lines, yearly monthly averages

keep 'em running

★ ANNUAL MILL CHECK-UP SECTION ★

THAT'S ALL THERE IS; THERE ISN'T ANY MORE.

This slogan should be pasted on the wall of the office of every chief executive, superintendent, plant engineer, master mechanic, and overseer, in textile mills. What they have now in the way of equipment is what they will have for the duration.

This same thought—"That's all there is; there isn't any more"—must be going through the mind of every textile production executive as he stands watching his machines pounding away—setting new production records for war.

Therefore, this same man must move quickly to his next thought: "Keep 'Em Running!" The main problem confronting the industry right now is the means by which the present equipment can be made to perform at an optimum level.

This then is the theme for this, the Sixth Annual Mill Check-Up Number of TEXTILE WORLD: "Keep 'Em Running!"

That means maintenance of equipment, both productive and auxiliary. It means the intelligent use and conservation of repair parts, accessories and supplies. And, in turn, those "musts" require proper personnel, proper organization, proper follow-through.

In this section, there is a series of bread-and-butter articles covering this vital problem in all its ramifications, including: organizing a maintenance department; establishing a maintenance tickler system; card room lubrication; twister maintenance; maintaining throwing equipment; caring for weaving equipment, wool scouring equipment, knitting equipment, etc.; maintenance of water-treatment equipment; and adding life to auxiliary equipment of all kinds including power generation, power transmission, lighting, air-conditioning, fire protection, intra-plant transportation, piping, etc.

These articles indicate what the individual mill can do to help itself. In addition, there is another source of assistance. The textile machinery companies and the manufacturers of auxiliary equipment—largely stripped of the opportunity to produce new equipment for their old customers—have been doing a marvelous job of education in connection with maintenance, principles and procedure. When in doubt, ask your machinery man.

Incidentally, he will help you not only on maintenance methods but also on purchase and conservation of repair parts. It has been stated recently in Washington, by men high up in WPB, that the main bottleneck in the textile industry might prove to be repair parts; that if we ever have concentration of the textile industry into nucleus plants, it will not be primarily because of shortage of materials or man-power, but because of shortage of spare parts. This forces upon every manufacturer even greater responsibility for the care and intelligent use of what he has. For, as we observed above, in a great many categories, that's all there is: there isn't any more.

Douglas G. Woolf

keep 'em running

How to Organize a Maintenance Department

TODAY the burden on the maintenance department is heavier than ever before. Despite the increased load on machines, the growing scarcity of repair parts, and the imminent shortage of skilled labor, equipment must be kept running. In the following article, particular stress is placed on the organization or reorganization of the maintenance department in such a way that incipient trouble will be spotted and repairs made before actual break-down of machinery occurs.

★ ★ ★

By EARLE MAULDIN
Southern Editor, TEXTILE WORLD

RANKING HIGH among the problems which textile executives face today is that of mill maintenance. The responsibility for keeping buildings and equipment in the best possible condition falls on the plant engineer, master mechanic, or some special man delegated for this duty, depending on the size of the plant and the organization of the mechanical department. In a mill of medium size the man responsible for this important task usually is the master mechanic. He must prevent shut-downs and slow-downs; he must keep the entire plant in condition to produce at top speed. This is important to the mill. It is even more important to the Victory Program.

The vital function of the master mechanic in the mill organization has been stressed before in these columns. Like the superintendent, he must be familiar with every department of the plant. He is the one man to whom every overseer turns in time of trouble. Whereas, each overseer must know his own department thoroughly, the master mechanic must know them all. With detailed knowledge of what, and whom, he has to work with, and with an understanding of his job, he can solve the most puzzling problems, and spot trouble or prospective trouble in every department.

Organization of the maintenance department should be worked up to fit the particular requirements of the mill. In order to do this effectively, several factors must be considered, such as size and type of plant, whether power is purchased or generated, ownership of village, and whether water comes from municipal or private supply. For a mill of medium size having its own water supply, village, and power plant, the organization shown in the accompanying chart is suggested as a guide.

In most textile mills—other than bleaching, dyeing, and finishing plants—responsibility for upkeep of machines is divided. This is due, first, to the fact that part of the care of machines is the duty of fixers working under the overseers of the various departments; and, second, that lubrication of equipment in a given department may be carried out in part by employees of that department and in part by members of the maintenance crew. It is important that the responsibilities of the maintenance department and the overseers for inspection, cleaning, lubricating, adjustment, and upkeep of equipment be defined so there will be no chance of neglect and no opportunity for buck-passing.

MACHINERY INSPECTION. The key man in maintenance work is, or should be, the machinery inspector. In some mills each overseer is responsible for periodic inspection in his own department. However, better results usually are obtained when one man handles the task, giving it his undivided time and attention. He must have the cooperation of every overseer, second-hand, and fixer. It should be his aim to prevent failures by spotting incipient trouble and investigating every indication of weakness or impending failure, noting especially such items as excessive vibration, unusual noise, hot bearings, insufficient lubrication, loose belts, and missing parts.

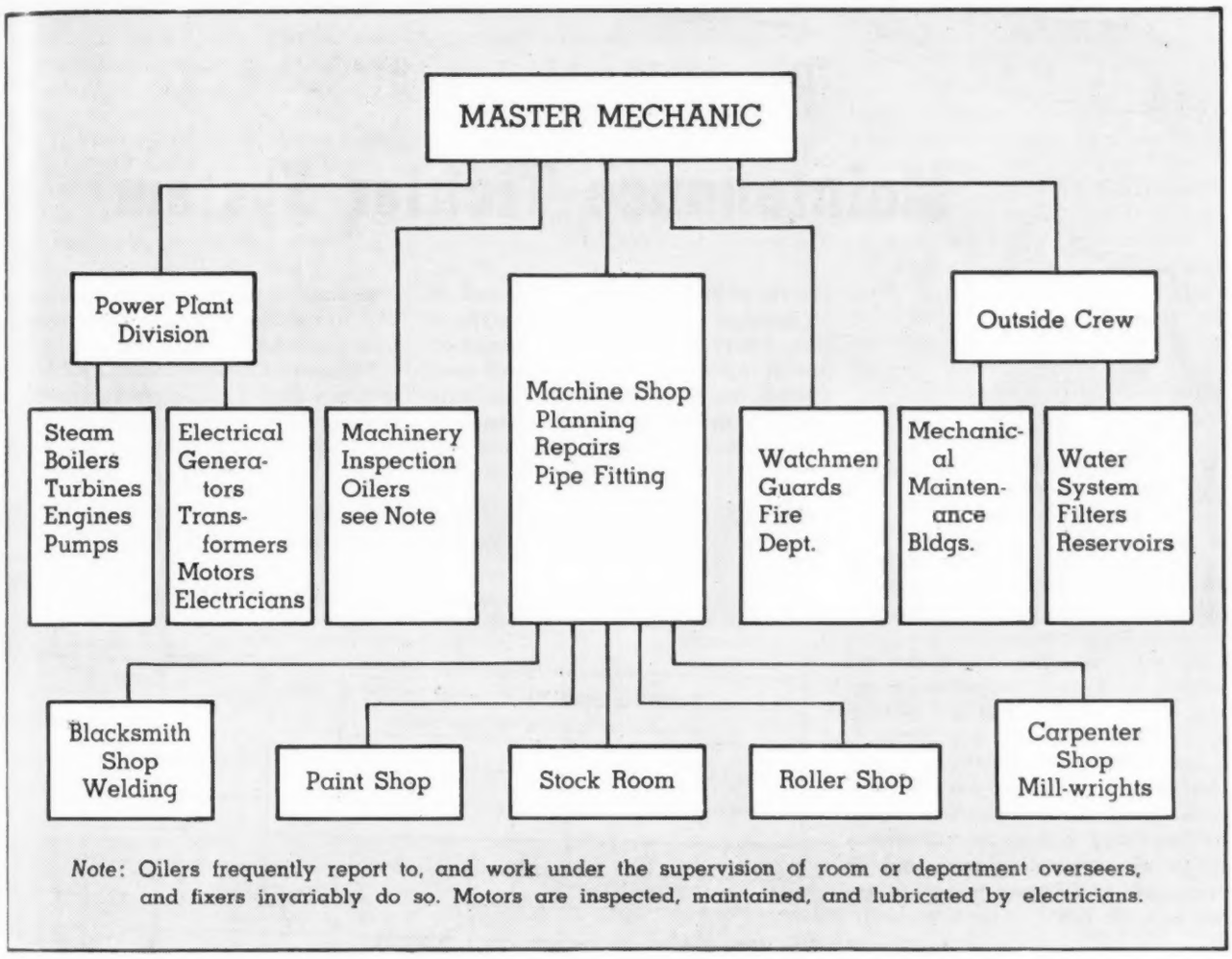
Any machine found in need of attention should be tagged or marked in some way, and the repair men and the overseer of the room notified. Frequently a machine which shows signs of impending failure, will not actually break down until it is stopped and an attempt is made to start it up again. Accordingly, the overseer may decide to continue running a machine until it is convenient to shut it down. In the meantime repair parts and equipment can be assembled so that when repair work is started it can proceed with a minimum of lost time.

In one well-organized mill, larger than the average, this system is being followed in the electrical department. One man spends all his time testing motors while in operation. He checks the load and speed, observes the temperature, looks for bearing trouble, and makes a report immediately. If the motor is over-loaded, the cause of the over-load is removed, or a larger motor installed. If running light, a smaller motor is substituted. If any defects show up in the motor itself, it is sent to the shop. Repairs are kept at a minimum, power factor is favorably influenced, and the mill has operated five years without a burned-out motor.

A large mill can well afford to keep one man on motor inspection alone, but a small plant must depend on one man, with perhaps one or two helpers, to keep up all types of productive and auxiliary equipment. In any event, manpower must be conserved, and the tasks so assigned that the full time of every man is profitably employed. If the inspection is thorough and intelligent, and if the inspection schedule is kept well ahead of the repair men, the work can be planned and carried out economically, and the maintenance crew built up to whatever man-power is required for efficient work.

The practice of waiting for a machine to break down before repairs are made cannot be tolerated. Too often avoidable failures happen at critical times. Further, if a part in need of repairs is neglected, it may result in injuries to other parts of the machine, ultimately causing a longer shut-down and larger repair bill than would have occurred if the fault had been detected and remedied when the first signs of wear appeared.

Another compelling reason today for preventive maintenance is the growing difficulty of securing repair and replacement parts. Some repair parts are still available, but others are difficult to


MASTER MECHANIC
Power Plant Division
Steam Boilers Turbines Engines Pumps
Electrical Generators Transformers Motors Electricians
Machinery Inspection Oilers see Note
Machine Shop Planning Repairs Pipe Fitting
Watchmen Guards Fire Dept.
Outside Crew
Mechanical Maintenance Bldgs.
Water System Filters Reservoirs
Blacksmith Shop Welding
Paint Shop
Stock Room
Roller Shop
Carpenter Shop Mill-wrights
Note: Oilers frequently report to, and work under the supervision of room or department overseers, and fixers invariably do so. Motors are inspected, maintained, and lubricated by electricians.

Organization of maintenance department for a textile mill of medium size.

obtain. A purchasing agent for a large group of mills told the writer recently, "Our main problem in maintenance of transmission equipment is in getting shipments after the material is ordered." Priorities, allocations, Government permits and approval, all enter into the complex situation. Therefore, the safest, and sometimes the most economical, solution is to keep the present equipment running. One item which is not easy to procure at present is cold-rolled shafting. Some of this material is needed from time to time in all mills, and the stock room usually has a supply. At the same time there may be an un-used line standing idle somewhere in the plant. An inventory of items of this kind should be made, and the material put back in use before entering orders for new material.

In recent months many mills have availed themselves of the offer of some of the larger machinery manufacturers to send expert service men to inspect and check the production of all machines of their manufacture in a plant. The service man, generally a factory representative, and frequently accompanied by a local representative who is familiar with operating conditions in the plant, goes over the mill, machine by machine, checks the condition and performance of each machine and makes a detailed report on each one. This report includes his recommendations as to repairs, replacement of parts that are worn or weak, changes in layout, or any factors entering into the efficiency of operation. The service men have in many instances spotted trouble, increased production, forestalled possible shut-downs. Although the mill's compliance is entirely voluntary, it has been found that by closely following the recommendations many man-hours have been saved.

There are few mills that do not appreciate the importance of training help to take the place of key men in the organization, so that the work can continue along an even, uninterrupted line if one, or two, or several men are called suddenly from their accustomed places. Changes must be made, sometimes on short notice—a third shift is found necessary and experienced men are at a premium, a draft board functions and new men must be ready to step into new places. It is then that the mills which have installed training courses for machinists and fixers are fortunate. With the growing scarcity of manpower, the feasibility of training women for mechanical jobs should be investigated. Already in a few mills women are being trained as machinists; and in at least one plant, as loomfixers.

Mills owning their own villages have a special maintenance problem that should not be overlooked. Although this is not connected directly with production, nevertheless the indirect connection and influence is powerful. Grievances, dissatisfied help, and excessive labor turn-over have a bearing on plant efficiency. And as a competitive measure to attract the best help and make the pay-roll stable, the condition of the village plays an important role. One large mill in North Carolina uses two men on continuous village inspection and repair, assisted from time to time as required by a shop crew. Electrical and plumbing installations receive special attention, as new material is most difficult to procure for the duration.

keep 'em running

How to Establish a Maintenance Tickler System

The effectiveness of any program of protective maintenance depends largely on how regularly and thoroughly those responsible carry out the inspection, cleaning, lubrication, and overhauling of productive and auxiliary machinery. Unique among systems devised to insure that each piece of equipment receives proper attention at designated intervals is the tickler system installed in a large print works and described in the following article. Among the noteworthy features of this system are its simplicity, its flexibility, and its adaptability to conditions existing in any type of textile mill.

★ ★ ★

By FORREST J. FALES
Glenlyon Print Works

A TICKLER SYSTEM affords a reminder to do certain important things at certain definite times. Ticklers may cover all functions of a business with respect to efficient plant maintenance and operation. When a tickler system is established and put into force, its simplicity and usefulness are very evident.

Ticklers may be requested by any person working in an executive capacity within the organization. This implies the assistant manager, the superintendent, the plant engineer, the master mechanic, the chief electrician, and the foremen of departments. The request must be in writing and approved by the next highest authority. No tickler can be put into circulation or none changed or cancelled without the approval of the general manager.

The physical requirements of a tickler system are the following:

1. Tickler forms
2. Follow-up forms
3. Notification of arrears
4. Scrap book (Master copies)
5. Yearly-daily file
6. Tickler clerk

The tickler form (Fig. 1) should be a standard size, say 5x8 in. Experience has proved that it should be printed on cloth, rather than on paper or card board, as both the latter deteriorate rapidly in continual use. Commodore blue print cloth is used throughout this organization, which fortunately is one of our own products. Another tickler form is shown in Fig. 2.

There must be some central point of issue for all ticklers, preferably in the filing division of the general office. It should be noted that, generally, a very

SB 176-S

To: J. Smith	Date	Sign Here	Date	#196 Signature
Do following work upon dates given in margin to right: Subject:	1/1	J. Smith	1/7	J. Martin
Inspect all Elevators throughout the plant.	2/1			
Do necessary greasing and make repairs	3/1			
where needed.	4/1			
	5/1			
	6/1			
	7/1			
	8/1			
	9/1			
	10/1			
	11/1			
	12/1			
Report to Mr. J. MARTIN When this has been attended to				

1

2

SB 176-S

To: MASTER MECHANIC	Date	Sign Here	Date	#172 Signature
Do following work upon dates given in margin to right: Subject:				
Send men around to paint hydrants and				
indicator posts in the yard limits.	7/1			
Report to Mr. W. Johnson When this has been attended to				

small part of the tickler clerk's time is required to operate the system, thus leaving the greater part for filing and other duties.

Ticklers should be numbered consecutively and two forms typed. The original is pasted in the scrap book as the master form, and the duplicate is filed in the tickler file by date of issue. The master copy should be filed in numerical order and indexed by classification of work, such as "Elevators, Hydrants" etc., to facilitate checking.

It is recommended that so far as possible dates of issue should be staggered, in order to overcome the handling of too great a number of ticklers in any one day.

GENERAL ROUTINE is as follows: Each day the tickler clerk removes from the tickler file all the ticklers filed for that particular day and mails them, through the plant mailing system, to the persons concerned. The record of the issue and subsequent return of the tickler are kept on forms as shown in Fig. 3. A follow-up form which is self-explanatory is shown in Fig. 4.

In some instances, such as inspecting and lubricating motors, it will be found necessary in order to facilitate the work and preclude the chance of any item being missed, to supply a form having the serial numbers of the machines, location of each machine, and spaces for checking. This form should cover a year's record and should be attached to the tickler. Once each month the tickler clerk checks the tickler-file copies of ticklers against the master copies so that corrections may be made for any misplaced or lost.

The flexibility of a tickler system is one of its big advantages. It is applicable not only to maintenance work, but to many other phases of mill management. The tickler form shown in Fig. 5, for example, serves to remind the office manager to make arrangements to take process inventory the last day of each monthly period. In the particular plant with which the writer is connected there are at present more than 260 active ticklers covering as many operations.

SB 177-S

Tickler Number	Sent To	Sent	Due Back	Notice Sent	Tickler Returned
196	J. SMITH	1/1/42	1/5	1/6	1/7

1 Tickler form reminding maintenance man to inspect elevators, grease, and make necessary repairs on first day of every month.

2 Tickler form reminding master mechanic to have hydrants and indicator posts painted on July 1.

DATE 1/6/42

MR. J. SMITH

TICKLER NO. #196 SENT TO YOU 1/1/42 HAS NOT BEEN RETURNED TO THIS OFFICE. *PLEASE DO SO AT ONCE.*

Tickler Clerk

FILING DIVISION *M. Wilson*

3

4

5

SB 176-S

To: OFFICE MANAGER	Date	Sign Here	Date	#78 Signature
Do following work upon dates given in margin to right:				
Subject:				
Make arrangements to take process inven-				
tory the last day of each monthly period.	1/5			
Report to Mr. T. Jones When this has been attended to				

3 Form kept by tickler clerk for recording dates on which individual ticklers are issued and returned.

4 Form reminding individual responsible that tickler has not been returned to tickler clerk.

5 Tickler form reminding office manager to take process inventory on last day of monthly period.

keep 'em running

How to Set Up Card-Room Lubrication Schedules

Lubrication is the keynote of card-room maintenance where equipment has to last indefinitely, as under present conditions. Lubrication schedules and forms compiled by the author of the following article will assist in caring for openers and feeders, pickers, cards, drawing frames and roving frames on two- and three-shift operation. Specifying the use of only two grades of oil and two grades of grease, Mr. Helliwell's charts simplify lubrication problems normally encountered when employing a large number of different lubricants.

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By E. H. HELLIWELL

CAREFUL SELECTION and proper application of suitable lubricants require extra attention to keep 'em running under present-day operating schedules. Frequently the only time the card-room equipment is stopped is for a cooling-off period at week-ends. Such operating schedules mean hours of continuous operation of all machinery. A hot stud or shaft expands and will increase the pressure in the bearing. It has no opportunity to regain normal temperatures and dimensions from machine stoppage. Scoring, wear, and inevitable replacement are the ultimate results.

Some card-room lubrication programs have been laid out calling for eight or nine different grades of oils and greases. Card-room supervisors testify to the difficulty of applying one kind of oil properly and with the required regularity. Increasing the number and the variety of the lubricants certainly increases the difficulty of maintaining proper oiling schedules. Simplification in lubrication procedure and a reduction in the number of lubricants is desirable whenever possible without sacrifice of lubricating efficiency.

Lubrication requirements in the card room can be satisfactorily filled with the use of two different grades of oil and two grades of grease. The oils required are a medium oil, 250 to 300 viscosity (Saybolt), and a heavy oil of 850 to 900 viscosity (Saybolt). Two greases—one medium light, and one medium stiff—are sufficient to fill all needs. Hard soap-laden greases are of doubtful lubricating value except on heavy, slow-moving bearings or at higher than ordinary operating temperatures.

Viscosities of oils and greases will vary as to name and number with the different producers, but the grades desired can be readily obtained by ordering by viscosity.

Actual experience has proved that with pressure fittings on plain bearings equipped with long lead-in pipes, a heavy oil will flow by gravity and furnish more efficient and more certain lubrication than will an immobile grease. The grease will not flow until sufficient heat is generated to thin it to the flow point. Ball bearings, however, can be lubricated properly with a light grease, either by packing or through

LUBRICATION SCHEDULE

	Lubricant used	*1st Shift*		*2nd Shift*	
		Frequency	*Oiler*	*Frequency*	*Oiler*
OPENERS AND FEEDERS					
Plain bearings	Medium oil	1S	OH	1S	OH
Plain bearings, fittings	#2 grease	1W	OH	1W	OH
Ball bearings	#2 grease	1M	OH	1W	OH
Vertical opener, step bearing	#4 grease	1M	OH	1M	OH
	(Turn screw on grease cup every shift)				
Apron bearings (packed)	#2 grease	M/3	SH	...	...
Shafting	Medium oil	1W	SH	...	...
PICKERS					
Plain bearings	Medium oil	1S	PO	1S	PO
Beater bearings (plain)	Medium oil	2S	PO	2S	PO
Beater bearings (ball bearing)	#2 grease	1M	PO	1M	PO
Fan bearings (plain)	Medium oil	2S	PO	2S	PO
Fan bearings (ball bearing)	#2 grease	1M	PO	1M	PO
Overhead shafting	Medium oil	1W	SO	...	...
CARDS					
Cylinder bearings (packed)	#4 grease	M/3	CG	M/3	CG
Doffer bearings (packed)	#4 grease	M/3	CG	M/3	CG
Licker-in bearings (packed)	#4 grease	M/3	CG	M/3	CG
Above bearings also oiled	Medium oil	1S	CT	1S	CT
Band pulleys	Medium oil	1S	CT	1S	CT
Feed rolls	Medium oil	1W	CT	1W	CT
Side-shaft bearings	Medium oil	1W	CT	1W	CT
Flat bowls	Medium oil	1W	CT	1W	CT
Flat drive	Medium oil	1W	CT	1W	CT
Flat brush bearings	#4 grease	1W	CG	1W	CG
Loose pulleys	Medium oil	1S	CT	1S	CG
Can table	Medium oil	2W	CG	2W	CG
Coiler head	Medium oil	1S	CT	1S	CT
Comb boxes (plain)	Heavy oil	1W	CG	1W	CG
Other plain bearings	Medium oil	1W	CT	1W	CT
Overhead shafting	Medium oil	1W	SO	...	...

pressure fittings. Chambers must not be over-filled with grease, as it increases the load on the bearings and will often cause over-heating.

Good results have been obtained using a grease on both plain and ball bearings by applying a heavy or medium oil on alternate oilings. This practice seems to improve lubrication and prevent caking of the grease. It is well known that this practice produces good results with card cylinder bearings and with other types of open bearings by keeping the grease soft enough to retain contact with the shaft.

Correct lubrication of card comb boxes has occasioned much controversy and has been the source of much experimentation. A wide difference exists in the viscosities of lubricants used in various mills and these range from a light oil to a light grease. Proper lubrication of comb boxes depends on splash, spray, and flow; hence it is evident that an oil is required which will flow freely at operating temperatures. Prevention of oil leakage appears to be the main reason for using the heavier oils. However, a great part of this leakage is caused by overfilling boxes. Where a heavy oil has been used for some time, it is difficult to return to the use of a lighter oil because of part wear that has taken place. It is recommended that a medium oil be tried first with boxes filled to the proper level before attempting to use heavier oils.

Everyone connected with oiling should be provided with a sharp-pointed brass clean-out tool to thoroughly clean out all oil holes before applying oil. Only the oil that reaches the bearing provides lubrication. It can be as troublesome in the wrong place as it is beneficial in the right place. Spoilage of stock is caused by careless or excessive oiling, especially at roll necks and arbors. An oil that has little tendency to creep along roll bosses should be used for arbors and necks and must be applied sparingly.

Specific gravity or viscosity is not an indication of the quality of an oil. Required viscosities are often obtained by mixing heavy and light oils together. Mixing two inferior oils will not improve the quality of either. Other oil properties and qualities such as film strength, lubricity, stability, flash point, etc., should be considered.

First step in the establishment of an efficient lubrication program is the selection of the proper lubricant for a specific purpose. This selection may be done by actual trial or upon recommendation of the supplier's engineers. The schedules should not be regarded as office secrets, but should be posted for the instruction and guidance of oilers, operators, section men and for checking on its proper execution by supervisors. The failure of any bearing because lack of lubrication should be investigated and the reason for such failure properly placed, either on the lubricant used, the method of application, or failure to follow the established program.

Differences in organization or equipment of mills may require deviations from the schedules as given. However, the accompanying schedules have proved effective in typical mills and will serve as a guide for establishing a lubrication program in other plants.

LUBRICATION SCHEDULE—*Continued*

	Lubricant used	*1st Shift*		*2nd Shift*	
		Frequency	*Oiler*	*Frequency*	*Oiler*
DRAWING FRAMES					
Bottom drive shaft bearings	Medium oil	1S	DO	1S	DO
Calender roll bearings	Heavy oil	1S	DO	1S	DO
Draft gear studs and bearings	Medium oil	1S	DO	1S	DO
Middle and back roll studs and bearings	Medium oil	1S	DO	1S	DO
Coiler head drive	Medium oil	1S	DO	1S	DO
Can table drive	Medium oil	1S	DO	1S	DO
Knock-off motion rocker	Medium oil	1S	DO	1S	DO
Traverse motion cam drive	Medium oil	1S	DO	1S	DO
Top steel rolls (ball bearing)	#4 grease	M/3	SH	M/3	SH
Bottom steel rolls	Medium oil	1S	DO	1S	DO
Top rolls (bushings)	Heavy oil	M/3	SH	M/3	SH
Front roll bearing, out	Medium oil	1S	DO	1S	DO
ROVING FRAMES					
Loose pulley	Medium oil	1S	FO	1S	FO
Head end jack shaft	Medium oil	1S	FO	1S	FO
Compound (old type)	Medium oil	1S	FO	1S	FO
Compound, enclosed type	Heavy oil	M/3	SH	M/3	SH
Cone and lay shaft drive	Medium oil	1S	FO	1S	FO
Twin gear and builder	Medium oil	1S	FO	1S	FO
Long lifter shaft	Medium oil	1W	FO	1W	FO
Weight chain sheaves	Medium oil	1W	FO	1W	FO
Draft gear studs	Medium oil	1S	FO	1S	FO
Front steel rolls	Heavy oil	S/4	FT	S/4	FT
Middle and back rolls	#4 grease	M/3	SH	M/3	SH
Top rolls, plain saddles	Medium oil	1S	FT	1S	FT
Top rolls, ball bearing	Heavy oil	M/3	SH	M/3	SH
Spindle tops	Medium oil	1W	FT	1W	FT
Bobbin gears and bolters	Medium oil	1W	FT	1W	FT
Spindle steps	Medium oil	1M	FO	1M	FO
Spindle and bobbin shaft bearings	#4 grease	M/6	SH	M/6	SH
Above also oiled	Medium oil	1W	FO	1W	FO
Overhead shafting	Medium oil	1W	SO	...	...

KEY FOR LUBRICATION SCHEDULE

LUBRICANTS—

Medium oil—250 to 300 viscosity (Saybolt) at 100° F.
Heavy oil—850 to 900 viscosity (Saybolt) at 100° F.
#2 grease—medium soft grease (soda base for ball bearings)
#4 grease—medium stiff grease (lime base)

NOMENCLATURE—

CG—Card grinder
CT—Card tender
DO—Drawing frame oiler
FO—Roving frame oiler
FT—Frame tender
PO—Picker oiler
SH—Section hand
SO—Shaft oiler

FREQUENCY—

1S—Once per shift
2S—Twice per shift
S/4—Once every four shifts
1W—Once per week
2W—Twice per week
1M—Once per month
M/3—Once every 3 months
M/6—Once every 6 months

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How to Handle Twister Maintenance

IN these days of three-shift operation, no part of twister maintenance can be neglected if machines are to be kept running at high efficiency. Following are suggestions on removing cylinders, care of builder cams, care of gears, and putting on new tapes. In addition, there is presented a check list, supplied by the superintendent of a large southern mill, covering the inspection, cleaning, lubrication and overhauling of twisters.

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AN AID to the systematic maintenance of twisters is a check list giving in detail the steps to be followed in inspecting, cleaning, lubricating, and overhauling the machines. The accompanying check list, which was developed by the superintendent of a large southern mill, can readily be adapted for use in other plants. The following notes on some of the finer points of twister maintenance might be incorporated in such a check list or made the basis of supplementary instruction sheets.

TWISTER CYLINDERS on wet twisting operations are often extremely difficult to remove. This is because the journal is rusted or corroded or is sprung in the attempt to remove it. It is not unusual for cylinder heads to be damaged by the attempt to remove it from the twister with crowbars, wedges and improvised tools. The cylinder nearest the drive end is the one that is removed most often.

To remove this cylinder, first secure several men for the job. Have one remove and tie up tapes out of the way; another should remove the bobbins so they will not be soiled; and another should remove the drive pulley, loosen the bearing at drive end, and remove screws from cap of the center bearing. Then loosen the connecting shaft setscrews at each cylinder head and at the adjacent head of the next cylinder. The setscrew in the adjacent cylinder head is loosened in order to allow the connecting shaft or journal to slip in the cylinder head if the other head is frozen to the journal. Next slide the two heads apart and support the cylinder by a crosspiece placed from spindle rail to spindle rail, while removing the drive end journal. If the cylinder is free it can then be lowered to the floor.

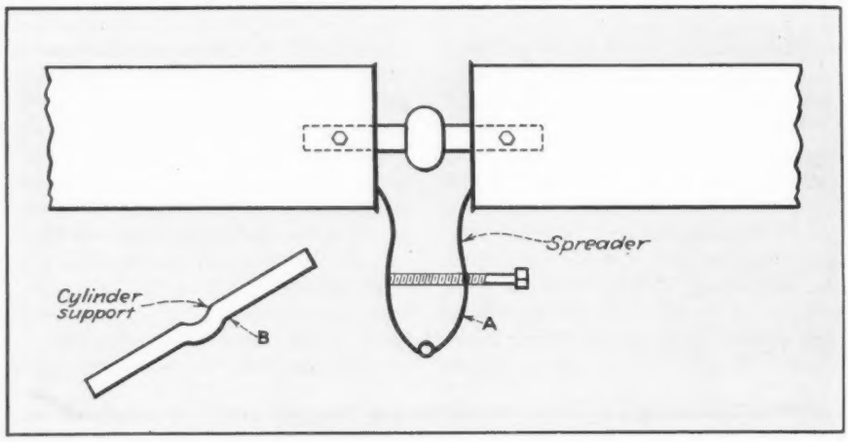

Fig. 1. Tools for removing frozen journals.

For cylinders difficult to remove, special tools can be made according to the sketches shown in Fig. 1. Tool *A* is a spreader consisting of two legs of strap iron pivoted with a removable pin with a screw in one leg to control the spread. The tool is shaped much like a nutcracker, but it works in the opposite direction in order to wedge between the cylinder heads and spread upon turning the screw. The pin in the hinge can be removed so the legs can be inserted more easily into the space between the heads. The screw head should be standard to allow it to be turned with hand socket wrench. Two of these spreaders should be used on opposite sides of the heads to apply pressure evenly so as not to spring and bind the journal. Pressure is applied evenly on both heads by two workmen one controlling each spreader until the journal is free. Another tool found

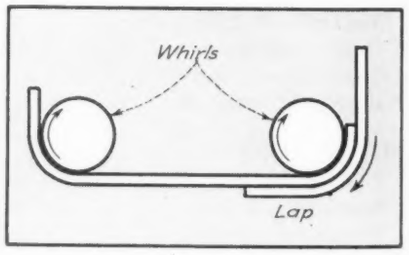

Fig. 2. Proper placing of lap.

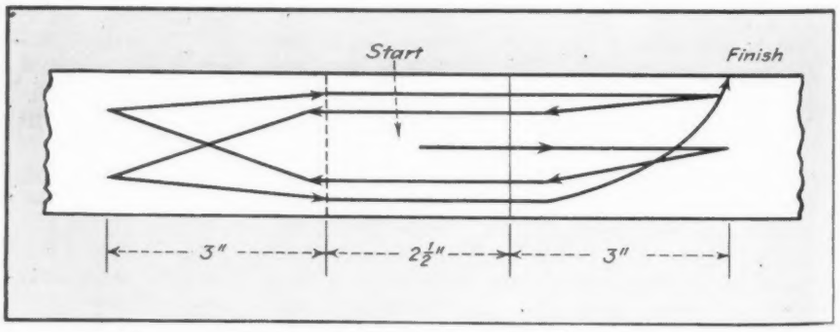

Fig. 3. Lap and stitching for tape for 3-in. gage frame.

useful is a flat strap iron support made in the shape indicated in *B*, Fig. 1, and long enough to reach from ring rail to ring rail. This tool is used to support the free end of the cylinder while the other end is removed.

BUILDER CAMS and followers that are badly worn cause bad winds and jumpy action of the ring rail. Fixers often make settings on traverse mechanisms to offset worn cams when the cam and followers should be cleaned, checked, and overhauled. Cam followers clogged with dirt and grease can stick and cause wearing of a flat side that can cause jerky traverse. To keep cams in good repair and operation follow these four suggestions on cam maintenance.

1. Clean cam and cam follower thoroughly.

2. Oil cam and follower face only if rough iron indicates grinding action. Then use only a few drops. Excess oil causes slippage.

3. Inspect cam and follower for alignment and for even and full contact of faces. Look for flat places on follower indicating sticking or binding. See that they run in a perpendicular plane and the center lines match.

4. Replace worn cam or follower. Case harden the cam only; with cam and follower both case hardened, the cam wears excessively. Followers are much cheaper to replace than cams.

Check List for Twister Maintenance

INSPECTION

1. Make certain twister is properly leveled and aligned on the floor.

2. Make sure all moving parts are free and are not binding in any way.

3. Set all gears properly to avoid wear and noise.

4. Set the idler pulleys so that the tapes will run in the center of the pulley. If the tape is not set to the center of the pulley, you will not get the maximum life out of the tape, and tapes are costly. Be sure that the pulley is tightened after the final setting.

5. Make sure the travelers fit the rings. New travelers should be broken in before running a full set.

CLEANING

1. Clean twisters thoroughly once a week. Every part should be cleaned and polished, including the cylinders. Clean with air if possible.

2. Inspect all rings once a week. All bronze rings should be removed and repolished.

3. Clean rings thoroughly before regreasing.

4. Scrub underneath twisters at least once a week to keep floor in good condition.

5. Clean twister decks, creels, beam stands, rails, and separators at every doff.

OILING AND GREASING

1. Start the twister and oil the spindles. Oil for spindles should be from 100 to 250 sec. Saybolt viscosity, according to the type of yarn being twisted.

2. Oil spindles once a week with heavy viscosity oil if the load is heavy.

3. Grease all ball bearings once a month.

4. Oil all fast-moving parts once every 8 hr. Oil slow-moving parts once every 24 hr.

5. Grease roll stands and remove and regrease once a month during full operation. To avoid trouble, be sure the grease is not too stiff to lubricate the roll necks properly.

6. Select the proper grease for the ring and be sure it is properly applied, so no ring will run dry between doffs. Clean and regrease rings during each doff period.

7. Change oil in spindle bases at least once a year when twister receives thorough overhauling.

OVERHAULING

1. Overhaul each twister at least once a year.

2. Relevel and realign the twister if a check-up shows it is out of level or alignment.

3. Replace all broken or worn spindles and bases.

4. Check the train of gears and replace all worn gears and studs.

5. Set spindles and be sure that they are plumb and straight.

6. Have section men do the following:

- A. Check gears and studs; reset idler pulleys.
- B. Check idler pulley bearings and replace badly worn bearings.
- C. Check tapes for tension; remove the slack in the tape to return the tape to its original length.
- D. Cut off all weak tapes.
- E. Tighten all nuts and bolts.
- F. Oil moving parts.
- G. Check cylinder bearings; adjust or tighten.
- H. Check motor belt and adjust if necessary.
- I. Clean out all old oil and grease in the gear head and replace with new oil or grease.
- J. Tighten beam stands if these are used.
- K. Check creel pins to see that they are tight.
- L. Check spindle alignment with a cord.
- M. Tighten slats and uprights.
- N. Set thread guides

Most checking can be done with the frame running. Make a complete cycle of these operations at least once a month, and the twister will always be ready to produce a uniformly twisted yarn with little lost time and waste.

SEWING ON TWISTER TAPES is carried out in various ways. One good method is as follows:

1. Cut the tape to approximately the correct length.

2. Put this tape around the cylinder and pull the ends to take out the stretch. Tension must be just right in order to have the tape tightener position correctly. Work from tightener pulley side.

3. Turn one end of tape one full turn. Lap and pin ends a little shorter than the gage of the frame.

4. Lap tape ends so the lap butt will run off whirls as shown in Fig. 2 and not into them.

5. Put tape around tightener pulley, cylinder, and spindle whirls to see if the turn in the tape is correctly inserted.

6. Sew tape in seven strokes back and forward as shown in Fig. 3. Start at inside center of lap and sew 3 in. over the lap at each end. The starting and two outside strokes are made with the sewing machine running forward since the tape is easier to guide when running forward.

TWIST GEARS get a lot of rough handling when fixers are in a hurry to make changes. Machines will be down less and the extra expense of new gears can be eliminated by following these simple rules when removing and putting on twist and change gears:

1. Loosen nut on gear stud and pry gear lightly to find if stud slips easily. Do not hammer on gear or stud if the stud is frozen because threads on gear teeth can be damaged.

2. Run nut out past stud threads and hammer on nut to loosen a frozen stud. Use a wooden block if heavy blows are necessary.

3. Pry gear off with small curved-end crowbar by using the twister frame as a fulcrum. Do not prize against gear teeth.

4. Tap off gear with a drift using care not to strike gear so as to damage gear teeth.

5. Ream out gears that fit too tightly on studs so as to avoid forcing gears off.

6. Cut gears with keyways. Pins are not satisfactory and will give trouble with wear.

7. Provide a storage place for gears where they may be sorted as to type, number of teeth, etc. A cabinet with metal pins spaced at intervals in the back to hold the gears is suitable.

8. Mesh twist gear properly with intermediate gear when putting the gear in operation. Set gear faces flush and do not mesh teeth too deeply. Gears not set deep enough or in alignment cause uneven wear on teeth.

9. Grease newly cut gears carefully for the breaking-in period.

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How to Conserve Throwing Plant Equipment

Throwsters will be limited to fewer and fewer repair parts. Every item that has to be replaced needlessly must be considered as subtracting from our total war effort. The author has, in the following article, covered the maintenance of throwing plant equipment, importance of lubrication, prevention of machine damage, hints on care of electric motors, hydro-extractors, cone winders, spindle alignment, and care of rings with view to extending the useful life of throwing equipment.

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By C. W. BENDIGO

MOST THROWING PLANTS and some rayon plants have a double problem of preserving idle machinery and keeping active machinery in the best possible running condition. And this includes more than simply squirting oil. A large number of throwing plants do not enjoy high priorities; hence, the value of throwing machinery and equipment is dependent on its condition.

In the maintenance of throwing equipment, nothing can replace regular inspections which locate wear and damage before either becomes serious. This can generally be accomplished in throwing plants during the cleaning operation. In any event, inspection should be a regular part of plant operation. Cleaning need only be done when there is dirt present, but inspections should be made regularly.

Too often in throwing plants the oiling and lubrication of the equipment either is added to the fixer's duties, to some other operator's job, or else is turned over to just any employee. Plant oilers should be given as much instruction and checking as other operators, and, based on the value of the machinery entrusted to their care, should probably be better trained than others.

The upkeep of machinery is the supervisor's, the fixer's, and the oiler's obligation, and also a part of operator's of the machine. As such, every operator should be specifically instructed that he is to report anything he finds defective about his machine. Good repair work is essential. Efficient fixers must be trained and have the proper tools.

Every throwing plant should have someone who knows the machines in question pass on every part before it is thrown away and ascertain, wherever possible, the cause of failure so that preventative steps can be taken before other similar parts fail. He should also be in charge of the storage of spare parts. Frequently, these stored parts are found worthless when they are needed because of rust, damage, or other contamination.

Every throwing-plant operative should be instructed in the caring of all machinery with which he comes in contact. For example, operatives should not be allowed to hit porcelain or glass guides with metal or other hard materials while setting traverses. Yarn boys and others operating trucks should be warned of the seriousness of running into machines. All machines likely to be damaged by being hit by trucks should be adequately guarded; angle iron bolted about the bottom of a frame offers excellent protection. Electrical conduits, switch boxes, gear boxes, machine legs, etc., should all be well protected with suitable guards.

Truck wheels and casters receive very little care in most throwing plants. These wheels are so prone to picking up waste from the flood that, regardless of thread guards, the wheels frequently skid across the floor, rapidly wearing out irreplaceable rubber wheel treads and damaging the floor when metal wheels or casters are used. These wheels should be cleaned and lubricated as often as required to keep them free and turning. This responsibility should be delegated to some one employee.

Motors for some plants are irreplaceable. If they are on inactive machines they should not be removed as occasions require. For the duration, all motors should be dis-assembled and cleaned at regular intervals, and this will vary, depending upon the motor and the type of service to which it is placed. Motors should be watched at all times for overheating, and those mounted vertically—and there are a great many in throwing plants—should have guards placed so that lint and foreign matter will not drop in the motor ends. Lint should not be permitted to clog them and water never allowed to drip into the exposed end. Motor overloads can easily result in burnt-out power lines, and these are difficult to replace. Whenever the power goes off, for any reason whatsoever, all motor switches should be thrown off and motors then started one at a time. Motors not needed should be shut-off at once, as they consume valuable power and are continually wearing while in operation. A motor that is smoking, a contact that is arcing, or a power line that is heating should be attended to.

The majority of gears ruined are so caused by improper meshing, although other causes of failure, such as overloading, or lack of lubrication, are contributing factors. Gears in the twist chain of throwing twisters often fail because of being overloaded for their size. Overloading of gears is often corrected by changing the twisting ratio.

Services of a competent lubrication engineer are generally required if best results are to be obtained. Very few throwsters, throwing supervisors, or fixers can substitute for his services. Lubrication schedules for throwing machinery should vary according to the type, condition, and load.

More spindles are damaged because of badly balanced bobbins caused by too much tension against the belt and by improper alignment than are lost from improper lubrication. Whenever spindles are oiled, a gage should be used so that surplus oil does not overflow and get on the spindle belts, as they are easily damaged by oil. Badly aligned spindles and idlers also damage the twister belt. The life of these belts can be greatly improved if made to run true by means of proper alignment of spindles and idlers and by preventing the belt from riding on either the flanges of the idlers or against any part of the machine. The belt should ride free—about $\frac{1}{8}$ in. or $\frac{1}{4}$ in. above the flange of the idler. Excessive belt tension and bad splicing ruin a high percentage of belts that normally would

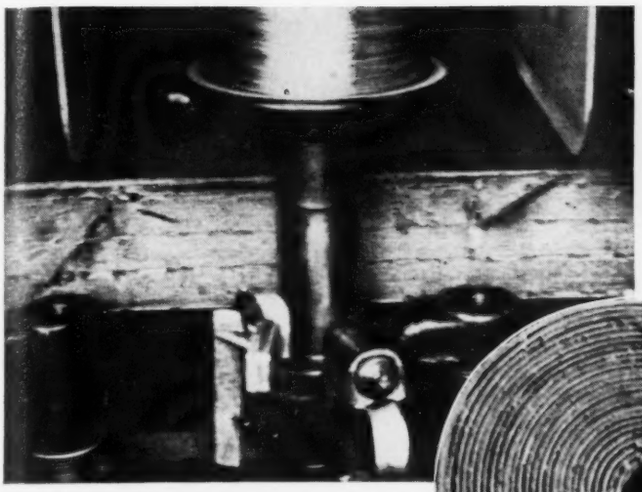

Fig. 1. Twister belts generally fail first at the splice, as illustrated.

Fig. 2. Broken twister belts should be saved for use on shorter machines or can sometimes be reused by splicing.

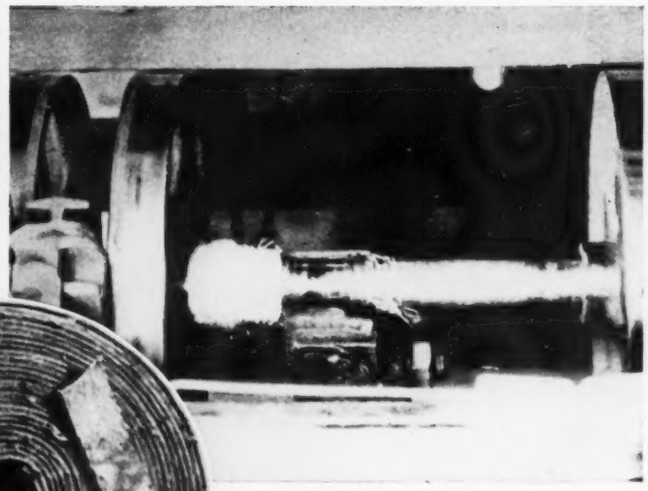

Fig. 3. Yarn waste collected on shafts next to open bearings tends to absorb the oil, causing a hot bearing.

serve for months longer. A belt will generally fail at the splice first, as shown in Fig. 1. Often serviceable belts can be made by splicing two old ones together, although this practice requires extreme care. Occasionally, additional service can be obtained from a ply belt by carefully stripping off a worn ply. Broken twister belts should be rolled and stored, as illustrated in Fig. 2, with thought towards possible salvage.

Serious breakage of throwing machinery occurs when an object becomes jammed in the traverse mechanism. This trouble can be held at a minimum by installing guards wherever such jamming might occur and by utilizing shear pins or other weak connecting units that will give way when undue strain is put on the traverse mechanism.

The so-called "units" in throwing machines are difficult to replace because they are composed principally of bronze gears and ball bearings. Life of such units can be prolonged indefinitely if they are checked for alignment frequently and if sufficient quantity of good, clean lubricant is kept in them. Most failures are caused by the use of an improper lubricant. Generally, "600W" oil is specified.

Belt idlers on twisting machines are often ruined by the time-honored method of leveling by means of hitting them with a hammer. There is only one correct way to level idlers and that is by means of leveling screws which are a part of the idler stand. Level idlers lubricated with the proper grade of oil every few months will last indefinitely if undue pressure is not put on them. Those idlers next to a small driving pulley must be replaced occasionally because of the high belt tension on end idlers, which is bad for belts, bearings, and idlers. Bearings may be oil retaining, but in throwing they usually require added lubricant if run steadily.

Waste collecting in bearings causes much damage to textile equipment. Lubricating devices, such as grease fittings or oil holes, are often stopped up. Sometimes the fittings themselves are missing. Such omissions should be corrected immediately. One type of oil failure frequently found in throwing plants is shown in Fig. 3.

Failure of the hydro-extractor in rayon throwing plants can soon shutdown the plant, if not put back into service quickly. Extractor care is mostly preventative, as failures come from water getting into the motor or parts and from loads that are out of balance. Motor guards should be employed to keep water from the motor and normal care exercised in loading the extractor.

Throwsters utilizing dryers or conditioning boxes employing fans should be certain that fan bearings, or any other bearings in machines that are subjected to heat, utilize a special lubricant for withstanding high temperatures. Bearings in such machines are usually a little difficult to service and, because of this fact, are often neglected unless a strict lubrication and inspection system is maintained.

Rayon cone winding machines are seldom idle. Special care must be taken of this equipment, because it is usually operating at top capacity continually. Traverse play is one item which soon renders these machines useless or in need of repairs. Lubrication of the cam and roller and proper alignment of these two items will keep repairs at a minimum. On the coning thread tension device, wear should be distributed over as wide a surface as possible to prevent the tension devices from becoming cut. When such tension devices do become cut, they can often be polished smooth and this will prolong their length of service before having to be replaced.

Twister rings, such as are used on double-twisting machines, can have a short life or a long life, depending largely on two items: the fit of the travelers and their lubrication. When laced rings are used, the wickings should be changed before they become hard or carbonized and a lubricant should be selected that will flow through the wicks at the proper speed so that the reservoir does not run dry in a few minutes after oiling. Selection of a properly designed traveler is essential and its design must often be changed because of wear on the rings, a change in the yarn, etc. Rings must always be kept centered and leveled.

Metal-headed bobbins, such as are used for steaming in practically all throwing plants, are now irreplaceable, yet they are probably subjected to much abuse by employees. They should never be used as hammers. When a small amount of yarn remains on the barrel, it should be removed carefully with sandpaper and should not be cut-off with a knife or scissor's point, as is frequently the practice. Care should be taken that bobbins are not dropped, bumped against parts of the machine, or otherwise abused and they should not be exposed to more dampness than is absolutely necessary.

keep 'em running

How to Simplify Maintenance of Wool Scouring Equipment

MACHINE shop work is essential in the maintenance for heavy textile equipment. Breakage of parts or failure of machines frequently calls for repair work or the casting and machining of new parts. Standardization in the handling of the requisition, of the accounting forms and maintenance inspection records made, and of the machining operations, as far as possible, reduce the length of time that a machine is withheld from production. The author outlines a procedure to be followed in standardizing machine shop practice which will apply to practically all textile mills.

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By W. A. LOFFT
Chief Engineer, Eavenson & Levering Co.

PRINCIPLES OF WORK SIMPLIFICATION can be employed to a limited extent in maintenance of wool scouring equipment, although in the actual process of doing repair work, it was found to be rather difficult to set-up definite schedules and standards on some jobs. This difficulty is caused, in part, by two conditions which exist in our plant. First, the plant is built on filled ground and as all the scouring equipment, particularly the heavy washers, is on the ground floor, where there is continual settling of the floor, the machines present a serious problem of misalignment. Second, the machinery employed is not all alike; hence, there must be several standards set for the same type of equipment. Neither of these two obstacles is insurmountable, but each adds greatly to the maintenance problem.

Most wool scouring plants are on war work to the extent that nearly all their product goes into Army and Navy uniforms, blankets, etc. They are in a position, therefore, to obtain certain priorities for vital materials, although the delivery time is often many weeks and even months for some items. Because of the increased amount of maintenance caused by production facilities being used to their full extent—120 hr. weekly—we were forced to expand shop facilities without taking more of the plant area.

Rearrangement of the stock room was necessitated by this expansion, and new shelves were built to make the most of overhead space. This type of expansion is important and should not be overlooked by anyone who needs more room. The stockroom, which is a basement location, is laid out in rows of shelves letters alphabetically, with the individual shelves subdivided and numbered for easy classification of the castings and other items stored.

Physical changes in the shop included the building of shelves for the storage of unfinished stock until it is machined. The finished stock is then stored in the stockroom, as illustrated in Fig. 1. These shelves are constructed very simply and help tremendously in keeping the floors unobstructed. This makes for easier and better housekeeping, and generally builds up a sense of neatness among the men, as well as helping to handle the flow of work through the shop.

Labor turnover has become quite serious and it has been necessary to set up a program for training new maintenance men. Being in the heart of one of the defense areas, our plant has found much competition for labor. Conscription and enlistments add to the problem. In most instances it has proved necessary to break men in for the repair crews, as well as on the machine tools, many of whom had had practically no mechanical experience.

This is accomplished by first giving the new men general helping work and placing those who show the greatest aptitude first in repair work and finally on machine-tool operation. In this manner, with the nucleus of a few trained mechanics, some of whom we have had for many years, we have built up a group of repair teams. When the plant is shut down on Saturday morning, these men, being well acquainted with the jobs which have been assigned to them, proceed without confusion to their specific job; two or three subforemen supervise their work.

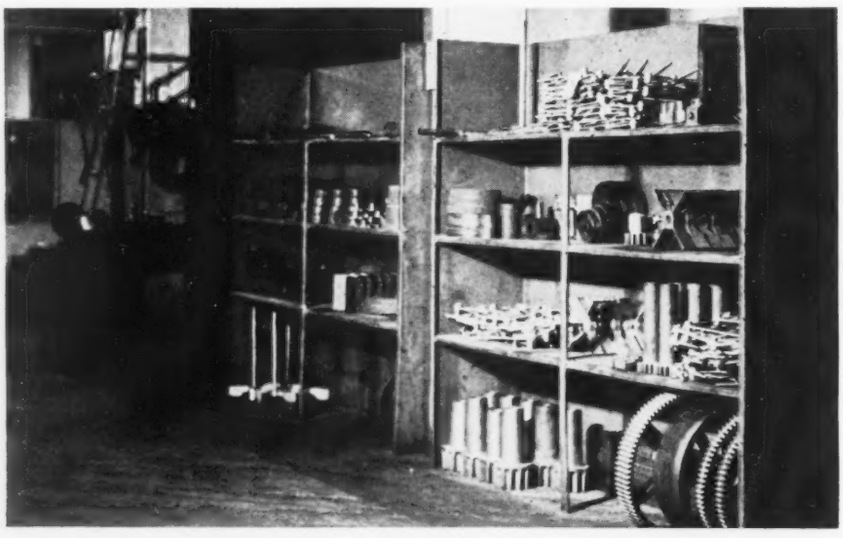

Fig. 1. Bins suitable for storing finished parts in the stock room.

MAINTENANCE PROCEDURE. Two methods are available for ascertaining what work is to be done on equipment. First, an inspector may be appointed who is thoroughly familiar with all the machinery in the plant. He should be constantly on the alert for defective equipment and report it as soon as it is discovered. Second, the foremen of the various departments may report to the planning department of the shop

during the week any work which is necessary, including of course, break-downs.

Concerning the system using an inspector, his duties require him to make inspection of all equipment periodically with the view toward determining what machines are in the greatest need of repair. The thought which he must always bear in mind when he discovers some defect is: "Will this equipment run through another week or should the repair work be done this week-end?" When a defect is discovered which requires immediate attention, the foreman of the department is contacted and the machine is shut down. This procedure is used only in emergencies.

Where the foreman reports needed repairs, this occurs mainly during the work-week. If adjustments are required, such as a rubber roll changed, or even if a break-down occurs, he sends or telephones an order to the shop planning department. A daily time ticket shown in Fig. 2 is used to record the job and is given to the repair foreman, or machine shop foreman if the former is not in the shop, who immediately sends a repairman.

RECORD FORMS. When the repairman reports in the shop at the beginning of his shift, he is checked in by the planning department on the daily time ticket, and the job to which he is first assigned is marked on it, together with the proper charge. Any change in his job is recorded on this card, showing the time on and time off, from which the elapsed time is figured. This information is entered on the maintenance inspection record, Fig. 3, held for the shop use and for the cost department for bookkeeping records. This form was developed after experimenting with other more complicated forms. The card is simple, yet it covers all the necessary information and at the same time is made on standard filing card size (5 in. x 8 in.) so that it may be filed for quick reference later. Because we use department numbers, it is very simple to assign and afterwards refer to a specific job.

The names of the workers to whom the job is assigned are entered and the estimated and actual time is recorded. These data are accumulated by means of the daily time ticket, Fig. 2. Date on which the work is finished is entered and OK'd by the repair foreman. The rest of the card is self explanatory. On the reverse side are printed the words "special procedure," and here the inspector outlines the necessary steps for the repairman to take, particularly in the event of a rather unusual job. There is also a place on this side of the card for listing materials and parts needed in doing this work.

After the job is completed, the clerk in the planning department files the card by departments and machine numbers. When a job is repeated in too short an interval, he clips a red indicator on the card in order to call attention to the fact that this particular machine should be watched more closely than the others, so that it may be studied for the cause of the trouble. Of course, the experience of this clerk is a valuable factor in reducing maintenance costs as there are many variables in this work.

IMPORTANCE OF STANDARDS. Many castings and parts are used on scouring equipment and its attendant preparation machinery such as openers, feeders, dryers, etc. It is important that these parts be machined or drilled to a standard for easier replacement.

Standardization of parts has required the making of jigs for drilling, machining or assembling. Each is a problem of its own and must be handled accordingly. This matter of jigs is a very important one in successful maintenance and one always deserving of intelligent consideration. It would be well for those responsible for maintenance to assign someone to study possibilities along this line. This person should, however, be thoroughly familiar with machine work and the specific work involved. This study will pay for itself many times over.

Forms and physical plant changes similar to those suggested will go far toward establishing a sensible approach for planning wartime maintenance.

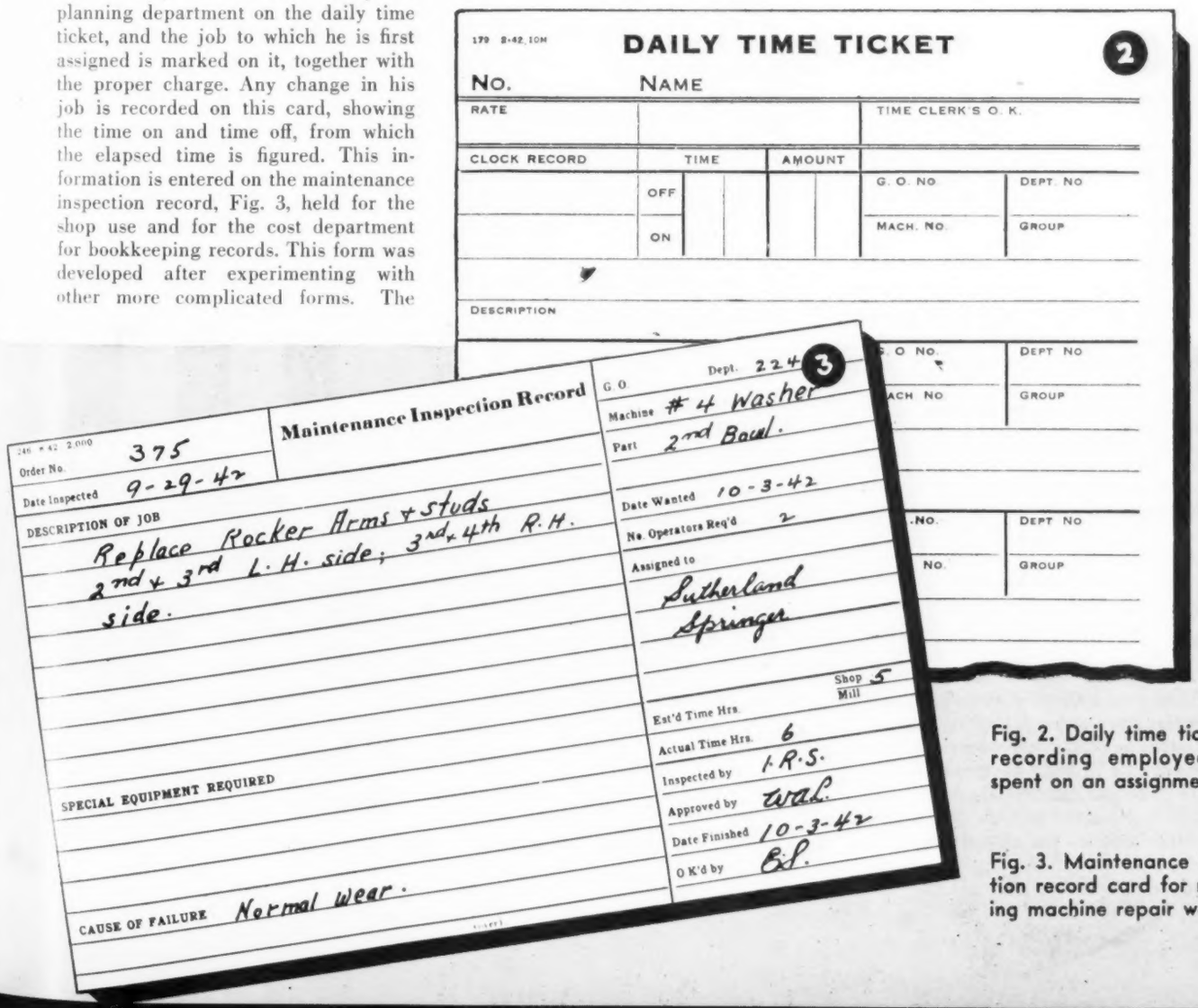

Fig. 2. Daily time ticket for recording employee time spent on an assignment.

Fig. 3. Maintenance inspection record card for recording machine repair work.

keep 'em running

How to Prolong Life of Weave-Room Equipment

LOOMS must last for the duration. Weave-room supplies must be conserved. Proper care of equipment includes correct lubrication of all loom parts and a consistent program of preventive maintenance. Whenever possible, supplies must be salvaged and reconditioned for re-use. In the following article, the author presents a lubrication schedule designed to insure lubrication of all loom parts at regular intervals. He also offers suggestions on prolonging the useful life of pickers and picker sticks.

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By ARTHUR C. WAYMAN

LUBRICATION—a cardinal point in maintenance of weave-room equipment—must be given careful attention if the looms are to continue to bang-out military fabrics on schedule. "Keep the old machinery running," has become the slogan in those mills that can no longer replace their present equipment with new. Proper lubrication retards wear and reduces the likelihood of broken parts.

Three stages of lubrication that should be followed are as follows:

1. Routine oiling by the oiler, beginning at one end of a weave room and following through in logical order until all looms are lubricated. The oilers load should not be so heavy as to require in excess of 10 days to complete his routine.

2. Each loomfixer should have an oil can and a grease pot. In making certain repairs, a fixer is surprised at times how a drop of oil or a touch of grease prevents future trouble. Of course, any unproperly lubricated parts should be brought to the attention of the foreman immediately, who in turn will investigate possible oversights or carelessness on the part of the oiler.

3. When the warp is out of the loom, the loomfixer should check the oiler's work. A properly lubricated loom means less fixing and a steady-running loom.

Special greases have been developed to reduce friction between picker shoe and ball, one of the assemblies of a loom that receives great wear. It is important that the correct grease be applied to these parts, as ordinary grease does not give satisfactory service.

Two gears receiving the greatest wear are the picking shaft gear and the clutch gear. The former particularly receives much punishment, which is proved by the fact that after a certain period of operation the teeth which mesh at the instant the picking motion strikes will wear very rapidly. Excessive wear will delay the pick in relation to the lay and harness timing, and besides causing loss in power. The best quality grease should be used for these gears in an attempt to prolong their useful life.

Bearings on the new looms are generally ball or roller bearings with pressure fittings. At intervals roller or ball bearings should be washed out with gasoline. The frequency depends upon several items. First, when looms run 24 hours daily and 6 full days a week, they need closer attention than when operating only 4 or 5 days weekly. With regular, careful weekly lubrication these bearings will not require examination for 2 years. Two or more extra bearings, consisting of the complete assembly, should be held in readiness so they can be-installed in the loom at overhauling after removing the old bearings. This system eliminates time delays. Those

WEEKLY LUBRICATION SCHEDULE
(Plain Bearing Loom)

Week ending:- / Loom parts	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Crankshaft bearings						
Crank arm bearings						
Rockershaft bearings						
Pickshaft bearings						
Pick rolls and shoes						
Camshaft bearings		■		■		■
Auxiliary shaft bearings		■		■		■
Harness cams		■		■		■
Treddles		■		■		■
Head motion		■		■		■
Take-up drum bearings	■		■	■		■
Knock-off parts	■		■	■		■
Box motion	■		■	■		■
Magazine	■		■	■		■
Protector rod bearings	■	■	■		■	■
Box guides	■	■	■		■	■
Shipper parts	■	■	■		■	■
Take-up parts	■	■	■		■	■
Let-off parts	■	■	■		■	■
All cut gears	■	■		■	■	■
Temple thread cutter	■	■		■	■	■
Temple bar	■	■		■	■	■

Fig. 1. Lubrication schedule for looms.

bearings removed may be cleaned and held in readiness for the next loom to be overhauled.

Major repairs, such as replacing a crankshaft, pick-up shaft, or rocker shaft, should include examination and washing of the respective bearings; the shafts themselves should receive close examination for possible damage by tight or improperly working balls or rollers.

A DEFINITE WARNING to clean all bearings is given when a bearing on a loom runs hot or freezes. The lubricant used may have been of the wrong type or the man responsible for lubrication may not have followed his schedule. Other loom bearings may give trouble in a short time unless they receive immediate attention. When checking these bearings, it is not only a matter of cleaning out the rollers, but the oil cup or the grease gun connection should also be examined carefully. Any obstruction in these parts may prevent the lubricant from penetrating properly and result in dry bearings.

Little need be said about lubrication of an intermediate or Gem head-motion. In general, these motions need

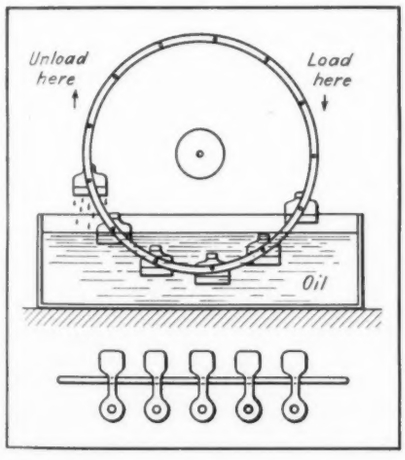

Fig. 2. Apparatus for soaking rawhide pickers.

good care and only small quantities of lubricants.

A dobby head performs the same duties as an intermediate head, but some oilers and fixers insist upon soaking every part of it with oil. This is a wasteful practice. The vibrators and needles will work much better without lubrication. Great freedom is allowed these parts in construction, and oil or grease are, therefore, superfluous. Jacks which do the heavy work should receive an application of good grease so as to reduce friction as much as possible. Grease is applied mainly to the bottom of the dobby or the harness jack which is raised by the hook jack.

Good policy dictates tearing down a dobby every time a warp runs out, washing each part in gasoline, greasing the jack as mentioned above, and reassembling the unit.

Regular oiling of the picker spindle will save wear on the rawhide picker. This oiling should be done at least once every shift. Care must be taken not to over-oil; an excessive amount will splash and, besides soaking the bumper strap assembly, will soil the cloth being woven. Probably the best method of lubricating is to stop the loom momentarily and wipe the rods with a rag soaked in a light oil, such as spindle oil. This method provides the desired film of oil.

Nothing but lubricants especially designed for their respective duties should be used in oiling looms. Non-fluid oils are fine for flat bearings, such as sleeve crank-arm bearings, but should not be used on the take-up motion.

Regular lubrication of looms according to schedule is essential. A chart, as illustrated in Fig. 1, assists in following the recommendations set forth in this article. The chart assigns certain parts to be lubricated each day of the week. When the routine for each day has been completed, the oiler places his initials in the respective squares.

This chart applies to those looms equipped with plain bearings, but may be adapted for looms equipped with pressure fittings. Frequency of oiling and greasing is extended, with the use of pressure fittings, to twice weekly, once weekly, and once every three months. The older plain bearing looms require greater care in lubrication and in matters of maintenance than the newer looms developed in recent years.

Another important and costly loom part to be lubricated is the automatic let-off motion. Some types are completely inclosed and should be repacked in grease every 6 months. A tag attached to the unit should have written on it the last date of overhauling.

WEAVE ROOM SUPPLIES can be conserved by giving them proper care. For example, common practice is to soak rawhide pickers in oil for several weeks. This soaking process will harden them so they last longer. But, pickers so treated with the wrong type of oil will become sticky because of heat created by friction on the picker spindle. Use of a good spindle oil for soaking will prevent stickiness and permit the picker to become just as hard.

When the hole in a picker is worn to the extent that it affects the flight of the shuttle, the picker should be removed and again soaked in oil for two or three weeks. The picker as removed from the loom is hard and brittle, but will soak up new oil readily. After soaking, the picker can be used again by reversing its position on the picker stick. If the holes are not worn too deeply, a section can be cut from the face and the picker reused again on each side.

A simple type of apparatus to construct that permits the soaking of pickers is shown in Fig. 2. This apparatus uses the ferris wheel principle. The addition of new pickers equals approximately the weight of the soaked pickers removed; hence balance is preserved. The wheel can be built any size to accommodate the number of pickers used.

In connection with soaking the picker, the picker stick is frequently soaked. This stick may be soaked in either whale or spindle oil for several weeks. Its submersion should not exceed 1½ to 2 in. Oil will be soaked up by the stick to a height of approximately 4 in. The stick should be suspended from a string or wire so it does not touch the bottom of the container. This practice will eliminate the tendency of the stick to warp when it

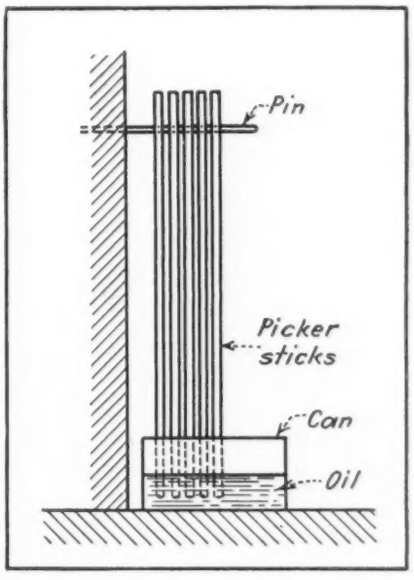

Fig. 3. Method of soaking picker sticks.

rests on its end. Hanging of picker sticks on a pin, as illustrated in Fig. 3, permits the sticks to be held at the correct depth in the oil bath.

Quills are useless when their tips are damaged. If the damage consists only of rough edges, the quills can be refinished by coating them with a mixture of half orange shellac and half linseed oil. Badly damaged tips should be cut off and re-finished by burnishing.

keep 'em running

How to Systemize
Knitting Machine Maintenance

Many knitting machines are turning out products needed by our armed forces; others are producing fabrics or garments essential to civilian comfort and morale. By and large, the machines now in place must be made to last for the duration. In the following article on preventive maintenance, particular stress is placed on the use of instruction sheets to insure systematic inspection, cleaning, lubrication, and overhauling of various types of knitting equipment.

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MAINTENANCE METHODS in knitting mills vary considerably from plant to plant, depending on the number and types of machines installed. Usually the fixers are responsible for the care and adjustment of the knitting machines, whereas the maintenance department is responsible for general upkeep of the plant, including painting, floor cleaning, inspection and repair of auxiliary equipment, and machine repairs beyond the scope of the fixers. In some of the larger plants, special crews in the maintenance department attend to the cleaning and lubricating of the knitting machines. Regardless of the way in which the work is divided, some system is necessary which will assure thorough inspection, cleaning, overhauling, and lubrication of each machine at regular intervals.

With the growing shortage of experienced fixers and mechanics, instruction sheets, giving the procedure to be followed in inspecting and overhauling each type of machine, are valuable in systematizing the maintenance of knitting machinery. An instruction sheet for inspecting latch-needle, rib-body machines is shown in Fig. 1; similar instructions can be drawn up for other types of knitting equipment. By following the instruction sheet, step-by-step, the fixer—even if he is comparatively inexperienced—is certain of checking each part of the machine which requires periodic inspection.

Certain parts of knitting machines are particularly susceptible to damage. To minimize trouble from such parts, an analysis should be made to determine the possible causes of damage. Special instruction sheets should then be drawn up for use by the fixers or maintenance men to aid them in making systematic check-ups of the machines to discover whether any conditions are developing which will give rise to damage to those parts where trouble is likely to occur at frequent intervals. In full-fashioned hosiery machines, for instance, sinker breakage is a common fault, which not only leads to bad work, but also to damage to other parts of the machine. An instruction sheet, adapted from a bulletin issued by Textile Machine Works, for use in inspecting full-fashioned machines to determine cause of sinker breakage is given Fig. 2.

CLEANING of knitting machines to remove all dirt and grease accumulations is essential to insure accuracy of operation and to prevent soiling of the yarn and fabric. Cleaning should be carried

INSPECTION INSTRUCTION SHEET

Latch-Needle Rib-Body Machines
General Inspection

1. Take-Up.

A. Check rolls for burrs; make certain rolls turn freely and that cloth passes easily without being pressed.

B. Check gears to make sure they mesh properly and turn freely; see whether any gears are worn and need replacement.

C. Check stop chain for weak links; make sure chains will stop machine if rolls drop too low or don't operate.

D. Check belt to make sure that it is not too tight or too loose and does not contain any weak places.

2. Brake.

A. Check brake to make sure it stops machine promptly without jerking.

B. Check spring to make sure it has not weakened.

C. Check leather for worn places.

3. Clutch.

A. Check clutch to make sure it is not slipping.

4. Cylinder.

A. Check cylinder to make sure it is not worn.

B. Check cylinder needles to make sure they are not wearing through top of cylinder.

C. Check dogs for smoothness.

5. Dial.

A. Check walls for wear.

B. Check dial needles to make sure they are not wearing through bottom of dial.

C. Check dogs for smoothness.

6. Cylinder Cams.

A. Check surfaces for smoothness.

B. Check all stitch cams to make sure they are ground alike.

C. Check cams to make certain none are too short.

7. Dial Cams.

A. Check surfaces for smoothness.

B. Check all stitch cams to be sure they are ground alike.

C. Check cams to make sure they are fitted so that no butts will catch.

8. Carriers.

A. Check all carriers for smoothness.

B. Check holes in carriers to make sure there are no grooves worn in them.

9. Stop Motion.

A. Check stop motion at each feed to make sure it is working and will stop machine promptly.

10. Needle Protector.

A. Check finger to make sure it is set close enough and is in proper position.

B. Check plunger to make sure it does not stick.

11. Needles.

A. Check needles to make sure they are not bent.

B. Check latches to make sure they are neither too loose nor too stiff.

C. Check hooks to make sure they are not opened.

D. Check throat for roughness.

Fig. 1. Inspection instruction sheet for rib-body machines.

INSPECTION INSTRUCTION SHEET

Full-Fashioned Hosiery Machines
To Determine Cause of Sinker Breakage

1. Coulier Motion.

A. Check slurcam box to make sure it slides freely on guide bar and that there is no foreign matter between slurcam box and guide bar.

B. Check sides of guide bar with straightedge to make sure they afford true line of horizontal travel for slurcam boxes.

C. Check friction boxes to make sure they are not lagging in their travel causing carriers to ride over sinkers because of loose fitting friction shoes, loose or worn friction leathers, loose friction — box housings or slides, or improper lubrication of friction-box rod.

D. Check bevel-gear teeth to make sure they are not worn because of tight frictions, gummed jack beds or slurcam box bar, loose Coulier brake, or insufficient clearance between the sinker back and the verge plate.

2. Catchbar Motion.

A. Check catchbar to make sure that it is not set improperly, permitting it to be twisted and thus forcing jacks against sinkers when sinkers and dividers are carried back by the catchbar.

B. Check catchbar to make sure it is not jumping out of position.

3. Jack Bed and Spring Bar.

A. Check jack bed to make sure it is not set improperly so that jacks strike sinker butt off center gradually loosening rivets.

B. Check spring bar to make sure it is not exerting too little or too much pressure on jacks.

C. Check jacks to make sure they are clean and well lubricated.

4. Needle Bar Motion.

A. Check needles to make sure they are properly aligned with their respective sinkers and dividers.

B. Check to make sure catchbar is not jumping out of position and failing to return to original position, thus permitting carriers to ride over top edges of sinkers and nick them.

C. Check carrier stops to make certain carriers are properly centered so they stop over a divider and not over a sinker.

Fig. 2. Inspection instruction sheet for full-fashioned machines.

at regular intervals and in such a way that every machine is thoroughly cleaned from the base to the smallest part. Cleaners should be provided with brushes, scrapers, rags, abrasive cloth and with ammonia or kerosene for removing grease and greasy films; and should be instructed carefully in the use of these "tools." To avoid interruption of production, some plants have found it advantageous to have the cleaning of machines done at night.

The changeover in full-fashioned hosiery mills from silk or Nylon to rayon has brought with it a number of new maintenance and fixing problems.

Mills which have not already done so will find it advantageous to give every machine a thorough cleaning and overhauling. In particular, carrier rods and eyelets should be inspected, and those having grooves, nicks, or sharp edges should be filed or ground smooth or replaced; tension rings should be examined for rough places and replaced if necessary; carrier tubes should be inspected, and those having sharp edges ground down or replaced. In brief, every part with which the rayon comes in contact should be put in perfect condition; otherwise production will be low and percentage of seconds will be high. After the machine has been cleaned, overhauled, and adjusted to run rayon, periodic inspection and attention are even more important than when running silk or Nylon. This is due to the lower tensile strength and elasticity of rayon and the abrasive character of some types of rayon yarn.

PROPER LUBRICATION of knitting machines is vital to their smooth operation. Most fixers contend that logically they should have the responsibility for lubricating the machines which they have the duty of fixing. In no event should the job be assigned to an inexperienced or irresponsible person. It is important also that lubricants of good quality and the proper viscosity be used.

A knitting mill can greatly simplify its lubrication problem by standardizing on a small number of lubricants. In general, only three grades of lubricants are required for lubricating knitting machinery, regardless of its type. These three types are:

1. A compounded knitting or needle oil of about 100 sec. Saybolt viscosity at 100° F.

2. A highly refined oil of 180 to 200 sec. Saybolt viscosity at 100° F.

3. A light grease free from acid or alkali.

Needle oils come in contact with the yarn, as well as the needles, and therefore should be readily removable from the goods in the scouring operation. Needle oils meeting specifications established by the National Association of Hosiery Manufacturers are available from several sources. These oils are suitable also for lubricating sinkers of full-fashioned machines; guide, sinker, and presser mechanisms of warp knitting machines; and sinkers, jacks, gear sleeve, dials, and take-up of circular machines. For shaft bearings, cam mechanisms, roll bearings, and motors, oil of 180 to 200 sec. viscosity or a light grease is suitable, depending on the age and design of the machine. The light grease is suitable also for lubricating anti-friction bearings and miscellaneous gears. Other grades of lubricants may be employed for specific purposes as recommended by the machinery builders, but the three grades mentioned above will meet most requirements.

A LUBRICATION SCHEDULE for each type of knitting machine should be set up. Care should be taken in setting up such schedules to avoid both over-lubrication and under-lubrication, and too frequent and too infrequent lubrication. For example, on seamless hosiery machines, needles are best oiled lightly with a spray gun every 4 hr. while the cylinder is revolving, whereas latches should not require oiling more than once a week by holding an oily feather against the latches while the machine is turned by hand. Sinkers, cams, and main driving shaft bearings should be lubricated once every 8 hr. Bearings for small shafts and studs, and bevel and spur gears need lubrication twice a week. In drawing up the schedule, it is advisable to specify the grade of lubricant.

First-class fixers on knitting machines can do much to "keep 'em running." A fixer should have a good knowledge of the fundamentals of knitting and a thorough understanding of the construction and operation of the machines under his care. As a rule, men who have had some experience as knitters make better fixers than those who have not had such experience. In training fixers, it is advantageous to set up standard procedures wherever this is possible.

For example, the important job of needle straightening can be standardized, and every new fixer trained to straighten needles according to that standard method. To obtain this standardization of fixing methods, it is necessary to establish fixers' classes or some other form of organized employee training.

Useful information on fixing can be found in bulletins issued by various machinery manufacturers and in the series of articles now appearing in TEXTILE WORLD on fixing hosiery machines.

keep 'em running

How to Take Care of Water-Treatment Equipment

In this article Mr. Alling, who is vice-president of Hungerford & Terry, Inc., offers authoritative advice on backwashing of sand filters and zeolite softeners, chemical clean-up of sand beds and zeolite, and care of gravel beds. In a subsequent article he will discuss the replacement of zeolite losses, methods of increasing softener capacity, and painting of filters and softeners.

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By S. F. ALLING

OWNERS OF WATER-TREATMENT EQUIPMENT can do several things which will prolong the life and increase the operating efficiency of existing installations of sand filters and zeolite softeners. With the ferrous and non-ferrous materials used in the construction of water-treatment equipment growing more difficult to obtain, it becomes the patriotic duty of the owners of such equipment to make it last as long as possible and thus help to conserve these needed materials. The following suggestions on care of sand filters and zeolite softeners are offered in the belief that they will aid the owners in keeping their equipment in good operating condition and making it perform better.

Regardless of whether the equipment is a sand filter or a zeolite water softener, its correct backwashing is of paramount importance. The backwash rate recommended by the manufacturer of the equipment should be used at all times, and a periodic check should be made to make doubly sure that the backwash rate is neither too high nor too low.

With a sand filter, if the backwash rate is too low, regardless of its duration, the filter sand bed is improperly cleaned and becomes increasingly dirtier, the filtration rate drops, the quality of the filtered water is impaired, and replacement of the filter sand bed becomes a necessity. If the backwash rate is too high, there is danger of losing much of the filter bed and even greater danger of disturbing the fine carrying gravel in the bottom of the filter, which condition ultimately results in a complete upset or turnover of the entire gravel bed and necessitates a complete overhauling of the filter interior.

If the equipment being backwashed is the zeolite type of water softener, too low a backwash rate will result in an accumulation of muck and dirt in the zeolite mineral bed, with a resulting reduction in softening capacity, dead spots in the mineral bed so that the brine regenerating solution does not completely contact and therefore completely regenerate the entire zeolite bed, and often—strange as though it may seem—a substantial loss of zeolite mineral because of the much too high backwash rate through those small open or loose parts of the bed through which the available backwash water is passing. Too high a backwash rate in a zeolite type water softener results in zeolite losses, gravel bed upsets, loss of capacity, and—of course—an unnecessary waste of water.

CHECKING THE BACKWASH RATE. If the filter or zeolite softener is of the open gravity type, the backwash rate can be very easily checked in a few minutes' time. This is accomplished by closing the inlet valve and timing the rise of the wash water above the sand or zeolite bed. A vertical rise of 12 in. per min. is equivalent to a backwash rate of 7.5 gal. per sq. ft. of sand bed per min.

If the filter or zeolite softener is of the closed steel tank pressure type, the backwash rate may be checked by a meter if one is available on the inlet to the unit, by removing the top manhole cover and timing the vertical rise, or by noting the crest or depth of water over a weir if a concrete or steel sump and weir is available in front of the equipment for receiving the backwash water. The accompanying table is convenient for use in calculating the flow of water over a weir.

On innumerable occasions, the writer has found drain lines of inadequate size for carrying away the correct rate of backwash and that to overcome this obstacle, the operator of the equipment was backwashing at a lower backwash rate than specified by the manufacturer, but for two or three times as long, hoping to obtain comparable results. This is a bad mistake, as backwashing any sand filter or zeolite softener for a longer period of time at a lower backwash rate accomplishes but little and is a forerunner of serious trouble.

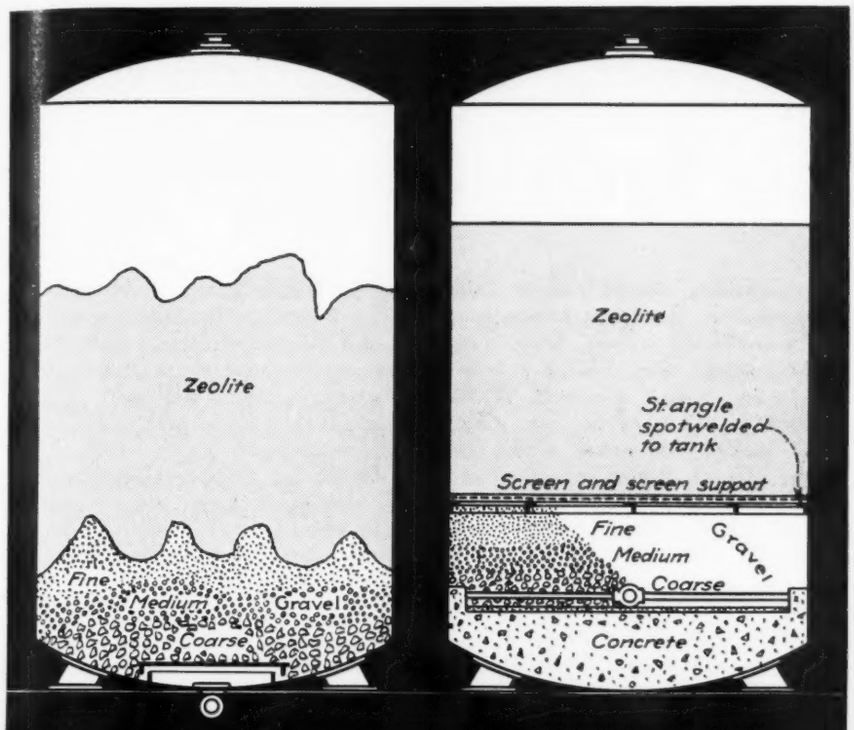
AN INTERIOR CLEAN-UP. There are often times when it is advantageous to give the filter sand or zeolite mineral bed a caustic soda or hypochlorite treatment or some other general clean-up or restorative treatment to improve its effectiveness. This should only be done in accordance with the instructions issued by the equipment manufacturer. Best practice is to send a representative sample of the material to the equipment manufacturer, who will examine it under a microscope and subject it to various laboratory tests before issuing instructions for its general clean-up bath.

A frequently used and often very satisfactory caustic soda treatment for a filter sand bed involves the use of ½ lb. of commercial caustic soda for each 1 sq. ft. of filter sand area. For

Flow of water over weir

IN. OF WATER OVER WEIR	GAL. PER MIN. PER FOOT WIDTH OF WEIR	IN. OF WATER OVER WEIR	GAL. PER MIN. PER FOOT WIDTH OF WEIR
½	12.0	6½	595.0
1	34.0	7	662.0
1½	62.3	7½	732.0
2	105.0	8	822.0
2½	144.5	8½	896.0
3	187.5	9	974.0
3½	234.0	9½	1050.0
4	284.2	10	1132.0
4½	337.0	10½	1216.0
5	408.0	11	1323.0
5½	467.9	11½	1409.0
6	529.0	12	1500.0

Example: A depth of 3 in. of water over a weir 2 ft. wide. This represents a backwash flow of 2x187.5 or 375 gals. per min.



Disturbed gravel bed results in large zeolite losses and low softening capacity between regenerations and necessitates costly overhauling of the softener.

A copper gravel-retaining screen keeps the gravel bed level, prevents upset gravel beds, and increases the efficiency and prolongs the usefulness of the equipment.

example, a filter with an area of 200 sq. ft. would require the use of 100 lb. of caustic soda made up in a definite volume of water over the filter bed. At times, a small amount of sodium or calcium hypochlorite may be advantageously used in conjunction with the caustic soda.

In the case of zeolite softeners, often a caustic soda treatment consisting of 1 oz. of caustic soda for each cubic foot of zeolite mineral may be advantageously used in the clean-up of greensand type zeolite. This treatment should only be given upon the advice of the manufacturer of the zeolite, since too high a dosage of caustic soda can be very destructive to the grain structure of some types of greensand zeolite.

Where alum is used as the coagulant in the treatment of water prior to sand filtration, it is extremely important to make sure that the alum is precipitated within the optimum pH coagulating range to insure the production of a large, tough, 100% insoluble alum floc that will be held completely by the sand bed in the water filter. It is also important that the filtration rate be in accordance with the manufacturer's instructions so that there is no danger of physically forcing the alum floc through the filter sand bed and also that the filter sand grains be clean, sharp, and non-slimy, so that they will completely hold back any of the coagulated alum which enters the filter bed.

Residual alumina in the filtered water can cause considerable trouble and expense in the textile mill where delicate dyes are used, in a steam boiler plant, or in many other places where even a fractional part of a part per million of this impurity cannot be tolerated. In view of this, a frequent check-up should be made to see that the raw water is being coagulated within the optimum pH coagulating range, that sufficient and proper mixing and settling are provided ahead of the filter units, that the filtration rate is not excessive, and that the filter sand bed is clean and capable of holding back whatever precipitated alum might go over into the filters.

Many filter equipment manufacturers will without charge or obligation, analyze filtered water samples for residual alumina and check up on the pH control system and the method of pretreatment at a water filtration system to see that there is no danger of residual alumina coming through the system and contaminating the filtered water supply.

Greensand zeolite type water softeners will satisfactorily remove residual alumina which might slip through the filter sand beds for any reason. This consequently safeguards the plant against residual alumina; but, unfortunately, the residual alumina has a harmful effect on the greensand zeolite, in that it enters into a complex chemical combination with the component parts of the zeolite and physically hardens it to the point where it is quite non-receptive to the brine-regenerating solution and delivers very little softening capacity. Several years ago, the presence of only approximately 0.5 parts per million of residual alumina in a filtered water supply reduced the capacity of the greensand zeolite in three 8-ft. diameter softener units by over 40% in approximately 5 years' time. The zeolite was still extremely hard and durable and of excellent grain size and uniformity, but it could not be sufficiently regenerated to produce over 60% of its original capacity, its complete replacement was later necessary.

THE GRAVEL BED in the bottom of a sand filter or zeolite softener is without question the least expensive part of the equipment, although the most important. If it is not kept perfectly level at all times, it can cause no end of operating trouble and expense.

To determine whether or not a gravel bed is level and not upset, the gravel bed should be probed by a wood or metal probing rod or stick inserted through the top manhole. Some of the equipment manufacturers supply their field men with pocket-size extension probing rods patterned after the conventional pocket-size fishing rod. By checking up on the elevation of the fine carrying gravel in the bottom of a filter or softener with respect to some point at the top of the softener, one can determine easily whether or not the gravel bed in the bottom of the equipment is level and in place where it belongs.

If the gravel bed is upset, the filter sand or zeolite bed improperly backwashes, because of the un-uniform distribution of the wash water, sand or zeolite is lost during the backwash and often during the filtering or softening processes, the cost of operation is too high, and the capacity of the equipment is extremely low. If the gravel bed is found to be upset, the contents of the unit should be unloaded, the old gravel layer screened and replaced or new material provided, and the old filter sand or zeolite bed reinstalled. A gravel-retaining screen such as illustrated in Fig. 2 will prevent future upset gravel beds and at extremely little expense, greatly prolong the usefulness of the apparatus, and increase its operating efficiency—frequently to the point where new equipment is not required.

keep 'em running

How to check up on condition of Auxiliary Equipment

Vital to the continuous, efficient operation of a textile plant is the condition of the mill buildings and the auxiliary equipment. In recent months a vast amount of information has appeared in business papers and in manufacturers' publications on maintenance under emergency conditions of equipment for power generation, power transmission, air conditioning, lighting, process control, fire protection, intra-plant transportation, and other auxiliary services. To supplement the increasingly large number of feature articles on maintenance methods, TEXTILE WORLD in August of this year inaugurated a Mill Maintenance Section, consisting of brief, up-to-the-minute items, a high percentage of which deal with the maintenance of various types of auxiliary equipment. The following article deals with one important phase of the maintenance of auxiliary equipment—checking up on its condition to make certain it is operating at maximum efficiency and is receiving the care necessary to prevent shut-downs and to prolong its life, thereby avoiding the necessity for replacement.

Power Generation

BOILER EFFICIENCY frequently can be increased by examining equipment under full output to find the factors limiting output, and by making relatively minor changes suggested by this study. Ways to get more steam from boilers other than those suggested by individual experience are these:

Draft System—Is the draft-system efficiency reduced by sharp corners or restricted passages? Can power be saved and steam output increased by installing modern splitters at duct corners, streamlined transformation pieces, and roomy fan-inlet boxes? Check ductwork and boiler settings for leaks.

Fuel Handling—Check segregation of coal in hoppers, thickness of fuel beds, gummed-up oil preheaters, eroded burners and registers. Is fuel stored safely to avoid fire?

Furnaces—Check for poor combustion, leaky settings and baffles. Are baffles in best location? Has possibility of increasing furnace volume been investigated? Are effective soot blowers being used?

Carryover—Is wet steam carryover at high boiler loads causing unnecessary shutdown of the plant by deposits in superheaters, turbines, dryers, etc.?

Cleaning—Have tubes and grates been inspected for corrosion or deposits? Are schedules of cleaning, repairing, and protective painting being maintained?

Testing—Does a trained operator make frequent boiler tests, including analysis of flue gas, determination of wetness of steam, and analysis of fuel, to determine whether steam output can be increased? Has boiler feed water been tested for hardness, etc., and proper method of treatment adopted?

Steam consumption—Is high-pressure steam being used where low-pressure will do? Are you recovering all exhaust steam or hot water flowing to waste? Have operations leading to peak loads been studied with the idea of staggering operations or cutting out non-essential loads?

Leaks—Check joints in pipes and packing for escaping steam. Check valves and traps for loss of steam.

Insulation—Check boilers, pipes, pipe tunnels, prime movers, and textile heating and drying equipment for heat losses. Is proper insulation being employed?

Heat Control—Are automatic controls employed so as to take advantage of conditions in departments that require less heat? Have heat losses through walls, windows, and doors been minimized by insulation and refitting or weatherstripping of windows and doors? Is steam metered to departments or major operations so consumption can be charged and waste detected? Are closed steam coils and lower temperatures used to do the heating job wherever possible?

Insulation—Is poor insulation limiting electric generating plant output? Are you watching temperatures on overloaded electric equipment and observing recommended temperature limits? (Some generators can carry a 25% overload for 2 hr. or a 10 to 15% overload continuously.)

Diesel Gas Engines—Inspect, clean, oil, and adjust diesel and gas engines regularly. Check air intake systems, air filters, exhaust piping, exhaust temperature, fuel filters and strainers, fuel tanks, starting air systems, jacket-water temperature, and scale in jackets. Check oil pressure, or, if water is used, look for leaks so piston cooling can be maintained. Check raw and soft water pumps, lubrication systems, oil filters, oil coolers, oil pressure, nozzles or spray valves, inlet and exhaust valves. Inspect cylinder liners carefully for cracks. Check combustion conditions by taking indicator cards once a week or take exhaust temperature regularly and plot fuel consumption against load.

Steam Engines—Take indicator diagram on cylinder to be sure valve setting is correct. Put in new piston and valve stem packing, as tightening of old packing can cause squared rods. Inspect cylinder, piston, valves, etc., periodically for proper lubrication. Clean oiling system and replace oil in bearing. Inspect steam separator for loose or broken parts. Keep foundation bolts tight, remove all lost motion from bearing, and keep steam pipes properly anchored so vibration will not loosen joints. Test pressure gages, high back pressure, and vacuum in condensers.

Turbines—Are you putting all the steam possible through your turbines to increase power output? Check with manufacturer before overloading any machine.

Cooling—Cool air in engine room and turbine room by forcing in more outside air. Measure temperature of air entering all electrical equipment and control ventilation to bring measured temperature near outside temperature.

Pooling Power—Are you interconnecting with other power sources and enlisting the aid of local power companies in disposing of excess or securing additional power?

Air Compressors—Stop leaks, reduce pressure drop, and keep the compressor in good operating condition by exam-

ining the compressor for leaky piston rings. Inspect internal parts for lubrication. Hold air consumption to a minimum and operate compressor so as to cut down unloaded and partly-loaded period of operation. Place air intake at coolest possible location for maximum efficiency. Protect air inlet with a filter and clean the filter regularly.

Pooling Supplies Equipment—Cooperate with other plants in swapping or lending valves, pipe, pipe fittings, gages, transformers, meters control instruments, etc., or even large units such as boilers and generators, to keep war industry operating efficiently.

Power Transmission

ONCE THE POWER IS GENERATED it must be handled so that it is not dissipated on poorly maintained transmission equipment, such as is likely to be found with an overloaded plant or overworked personnel. Fit the transmission equipment to the job. Check up transmission equipment, both electrical and mechanical, as follows:

Motors—Keep windings, ventilating ducts, commutators, brush rigging clean so the motor can operate cooler with less chance of break-downs and fire. Lubricate in accordance with motor manufacturers specifications and put the responsibility where the lubricating can be done correctly. Inspect gap between rotor and stator; brushes and commutators for wear or arcing. Inspect motor leads, maintain ground connections, and overhaul motors annually.

Control Equipment—Keep control equipment clean, maintain contacts in smooth condition, replace worn parts. Keep electrical and mechanical connections tight. Check oil level and condition. Check overload devices.

Wiring—Keep wiring in safe condition to prevent fires or injury to personnel. Inspect extensions and drop cords at least every three months. Comply with regulations of the plant protection officer in your Corps Area. Keep switch boxes, junction boxes, fuse boxes, and panel boxes clean and tightly covered to prevent sparking.

Fuses—Check all fuses once a year to prevent overfusing. Keep fuse clips clean and tight, maintain refillable-type fuses and keep fuse and switch cabinets tight and doors closed.

Transformers—Keep oil in good condition and maintain oil at proper level. Test temperature once a month and be sure it doesn't exceed 90° C.

Lightning Arresters—Maintain good ground connections. Never use iron or steel conduit or pipe to protect ground wire unless they are bonded together. Check all connections before lightning season.

Flexible Couplings—Inspect couplings on shafting for misalignment (shafting should have couplings designed to compensate for some misalignment). Keep power unit aligned with driven machine. Lubricate couplings that require it. Protect couplings against dust and dirt. Do not get oil on rubber or leather elements.

Clutches—Adjust clutches so surfaces do not drag and act as a brake. Make certain clutch surfaces do not slip when engaged.

Gear Reducers—Check mounting and gear meshing on gear reducers. Lubricate regularly, but don't over-lubricate.

Chain Drives—Are sprockets properly aligned? Check motor shaft "float" to see sprocket is not thrown out of alignment. Don't let chain get slack or rub against any other parts. Enclose chain and lubricate regularly with proper type of lubricant.

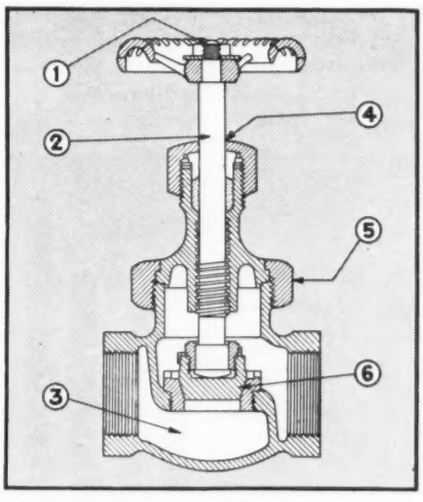
Flat Belts—Are belts of ample capacity for the job? Maintain proper tension to prevent loss of power or excessive wear. Don't run belts on undersized pulleys requiring excessive tension. Don't let oil or water get on belts. Use modern group drives and avoid long lineshafting wherever feasible.

V-Belts—Use sheaves of sufficient size and a number of belts that will carry the maximum load. Keep sheaves in alignment. Keep belt tension such that the belts do not slip and at the same time are not worn excessively by too much tension.

Piping and Fittings

MAKE A SURVEY of piping, valves, traps, hot water and steam return lines, air and steam intakes and outlets at regular intervals. Consider and provide for emergency conditions.

Pipes and Fittings—Clean, replace, and paint as inspection indicates. Consider new advances in pipes and fittings before purchasing new pipe. Fit the pipe to its requirements. Investigate new pipe for special uses, such as corrosion-resisting pipe, heavy-walled pipe of steel for high pressures, and threadless pipe and fittings that can be bonded by brazing with an alloy ring. Consider asbestos, fiber, lead, glass, wood, tile, and plastic pipes for special uses as substitutes for iron, steel, and rubber pipe.



Valve maintenance hints offered by large manufacturer: 1, keep handwheel nut tight; 2, stop leaks around stem by renewing packing; 3, remove dirt and scale when inspecting valve; 4, oil frequently, especially on steam lines; 5, use a monkey wrench, not a pipe wrench, for taking valve apart; 6, inspect seating surfaces at regular intervals.

Valves—Check valves to see that they are not leaking and that they seat properly. Investigate new valves that prevent wire-drawing action of steam. Check operation of safety and relief valves. Use lapping tools recommended by the valve manufacturer in repairing valves and lap only the amount necessary to get a good seat. Use proper seat and feather gages and use right spring in each valve. Consult with manufacturer on making changes in the set pressure of valves.

Traps—Clean traps on a regular schedule. Investigate traps to find if they are of sufficient capacity to handle job. Consider traps with stainless-steel interiors to prevent corrosion.

Painting—Identify feed and return lines with colored paint to save useless inspection when looking for trouble.

Drains, Floats, Strainers—Clean and paint drain piping, strainers, floats, etc., that are likely to accumulate deposits from processing liquors. Flush with water from high-pressure nozzles at regular intervals.

Insulation—Use a good insulation material on hot and cold lines. Check cold line insulation for air-tightness, as frost forms on pipe and break down insulation that is not air-tight.

Drainage—Arrange all piping for drainage. Use a drain pipe for steam of not less than ¾ in., because steam and oil separator operation depend upon reliable drain facilities. Arrange sections of water lines so they can be drained and repaired.

Removing Scale—Remove pipes from position to clean out scale by making sections of equipment inoperative. Leave joints uninsulated where pipes are likely to leak at the joints or need frequent cleaning. Investigate compounds on the market that are particularly efficient in the removal of rust or hard water scale or deposits from pipes and fittings.

Buildings

RECOMMENDATIONS of the Corps Area plant protection officers are made to help protect your plant from fire and sabotage. Carry them out to the letter. In addition, secure only such scarce materials and supplies as are absolutely necessary for building maintenance. Over-ordering causes shortages. Some of the things that should be checked regularly are:

Sabotage, Vandalism—Check up on adequacy and condition of fences, outside lighting, and other protective equipment.

Roofs—Keep incendiary bomb fire-fighting equipment on the roofs of buildings. Inspect roofs regularly for blistering, loose graveling, and condition of flashing around parapet walls, monitors, joints, and seams. Anchor the roof with metal strips to strong upright supports. Insulate roof against heat when re-roofing.

Chimneys—Check chimneys regularly, especially near the top for cracks and holes. Point up cracked brick chimneys immediately and band with steel. Paint metal stacks with heat-resistant paint. Inspect guy wires regularly to prevent wind damage. Give regular attention and cleaning to smoke breaching.

Floors—Keep floors repaired, especially in places where injury to personnel may result. Use cleaning compounds that do not cause quick deterioration. Investigate advantages of new penetrating floor finishes designed to preserve floors and eliminate soap and water scrubbing. Patch cracks on concrete floors with a material which permits the formation of a hard feather edge. Use non-slip materials as topping for newly covered floors when oil is likely to be present.

Stairways—Replace worn treads and repair loose hand rails. Paint corners white to stop spitting. Clean stairs regularly.

Elevators—Make elevators the special responsibility of one person. Observe safety rules in using cleaning or repairing elevators, pits, gates, etc. Check cables, brakes, gates, doors, switches, etc.

Walls and Supporting Columns—Check walls in older mills; also beams and supporting columns for deterioration, overload, or need of paint. Are wood columns subject to dry rot at the base?

Windows—Inspect wooden window sash for condition of glass, putty, and ropes. Insulate against condensate with double glass. Consider advisability of applying protective coatings to make glass shatterproof in event of bombing.

Heating—Tie-in heating with air conditioning and ventilation. Clean and paint pipes by schedule.

Wiring—Check temporary wiring, since it is a source of danger to building and personnel. Put in wires protected with conduit and installed so as to prevent shorts.

Camouflage—Check with your Corps Area plant protection officer on advisability of camouflaging buildings.

Painting—Investigate the properties of the many new and specialized paints now on the market. Make test paintings of the products of several paint manufacturers for each job. Secure unbiased data from other plants on their experience with certain brands of paint. Investigate paint spray equipment and up-to-date accessories or equipment to save time and labor.

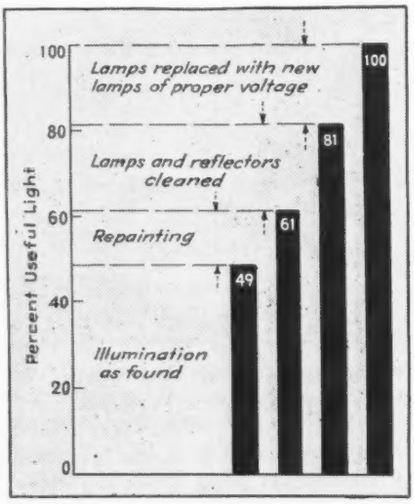
Painting Schedule—Have maintenance foreman schedule painting in all departments and keep a record of paint used and other pertinent data. Arrange for shutdowns in departments needing painting on week-end or holidays. Don't continue to put off maintenance painting, as lack of paint can cause lowered production, seconds, and deterioration of buildings and machines. Do the most important paint jobs first if at all feasible.

Care of Painting Equipment—Clean and store all sprayers, hose, compressors, brushes, etc., in order to prolong their lives and conserve strategic materials. Keep plenty of cleaning fluids, rags, etc., on hand, and provide a place for painters to clean and store equipment. Provide fireproof lockers, cans, and spray booths to avoid spontaneous combustion.

Lighting

LIGHTING PRACTICE in textile mills has enjoyed a spectacular advance. But lighting installations—whether they be of the incandescent or new fluorescent type—must be kept in good condition if they are to be efficient. Lighting ties in closely with painting and air conditioning—light must not only be reflected from a proper surface, but heat must be dissipated. The following suggestions are offered to assist in the maintenance of proper lighting:

Light Intensity—Check over your lighting equipment to see if it is giving you enough light for the job. Arrange for tests by engineers with light meters to show up the poorly lighted areas.



Improvement in lighting conditions effected by repainting and by cleaning lamps and reflectors, as reported by Illuminating Engineering Society.

Fit Light To Job—Light adequately but do not over-illuminate; power and materials must be conserved. Check illumination in each department against recommendation of I.E.S. and other authorities. Change existing distribution to improve lighting if necessary.

Reflectors—Be sure reflectors are cleaned on a regular schedule. Are the reflectors of the correct type for the job? Can reflectors be swapped with other departments to increase overall efficiency of lighting? Install reflectors that are easy to clean. Use a damp rag when cleaning.

Tube Replacement and Cleaning—Are tube and bulb failures occurring at irregular intervals? Replace bulbs with as little loss of operating time as possible. Have maintenance crews develop special stepladders on casters or scaffolding to facilitate replacement of bulbs. Work out cleaning schedules with different departments and have them adhere to them.

Auxiliary Control Equipment—Secure reliable auxiliary controls, such as ballasts, starting switches, starting compensators, reflectors, etc., so as to be sure of the best performance. Keep line voltage close to voltage indicated on the fixture to avoid heating or flickering.

Painting—Conserve power and improve lighting conditions by checking the paint in the area. Is the light reflection sufficient? Can the painted surfaces be cleaned or must the reflecting surfaces be repainted? Are you painting equipment to avoid deterioration?

Maintenance—Do you have a plant electrician who understands lighting requirements for each department? Does he submit recommendations for improving lighting at intervals? Are all supplies and accessories stored for future use when removed from a job, or do usable parts find their way to the scrap pile?

Control Instruments

RESPONSIBILITY for the adjustment and maintenance of control instruments throughout the plant should be centered in one man. To keep such instruments in top operating condition the following points should be checked:

Air Pressure—Check the air pressure by gage on air-operated controls. Blow out strainers and air cleaners. Reduce main pressure to proper operating pressure. Check pipes, joints, and couplings for air leaks or for wear against moving machine parts.

Valves—See that valve is adjusted to the recommended position for open or close. Tighten packing on steam valves. Check rubber di phragms for air leaks.

Cleaning—Clean instruments as recommended by the manufacturer. Keep cases tightly closed to keep out dust and moisture. Examine air control and clean if necessary. Clean off thermometer wells in mixing or heating kettles.

Adjustment—Have instrument man make and maintain standard adjustments. Keep instruments under lock and key, and don't let anyone but an instrument man make adjustments. Have cycle controls for temperature and pressure calibrated at intervals. Keep pens properly inked and use the correct charts. Check humidity controllers and recorders with sling psychrometer at least once daily. Put in new control elements as needed.

Charts—Provide a place to keep charts away from moisture. Use the right chart on the instrument, preferably the one furnished by the manufacturer. Keep a fresh supply of ink on hand. Clean pens at least weekly.

Repairs—Do not allow anyone but an expert instrument man actually to repair a control instrument. Unless a plant is large enough to warrant training a man at the control instrument manufacturer's plant, it is best to put in a spare instrument and send in the broken one to the factory. Minor repairs may be made by the instrument manufacturer's field man.

Protection of Instruments—Protect by strap metal guards all instruments located at levels where trucks or boxes can be run against them. Install air pipes or tubes so as not to interfere with or be damaged by the operation of the machinery. Keep drip and condensate off instruments. Install instruments on heavy panels on walls or uprights and in such a position as to be out of the way of moving equipment.

Air Conditioning

PROCEDURE for maintenance of air conditioning equipment varies considerably, depending on the type. Below are listed the more important points to be checked on central-station systems, and on the three principal types of direct-humidification systems—atomizer, high-duty, and centrifugal systems.

1. CENTRAL-STATION EQUIPMENT:

Outside Air Intake—Check openings for obstructions; check condition of louvres, screens, cowls, hoods and flashing. Are screens and protective grilles clean and securely attached and are they in need of paint?

Volume Dampers—Do dampers move freely between open and closed positions? Do they need lubrication? Check damper operator and linkage for cleanliness, lubrication, and loose connections.

Mixing Chamber—Is chamber clean, tight, or in need of painting?

Renewable Air Filters—Are cells clean or are refills necessary? Do frames need cleaning and painting?

Continuous Air Filters—Are filter and bath clean? Check filter surfaces for by-passing of air. Do frames or tanks need cleaning and painting? Check operating mechanisms, motors, and switches for loose connections.

Tank or Pan—Drain, clean, and flush tanks and drains. Check for corrosion, rusting and need of paint; check piping connections for leaks; check float valve and water level.

Spray Type Apparatus—Check spray piping for corrosion, rust or leaks. Clean, repair and paint as needed. Has the nozzle body eroded or cap orifice enlarged? Clean all nozzles.

Surface Type Apparatus—Check coils for cleanliness, and coils, piping, and valve packing for leaks. Check drains and flush coils. Check spray orifices for erosion and clogging. Check condition and operation of valves.

Reheating Coils and Eliminators—Check for leaks in coils, pipes, valve packing, etc., and the operation of steam regulating valve. Examine drains, drips, traps, etc. Are eliminators clean or are repairs and painting needed? Check sealing to stop bypassing air.

Fans—Check fan connections for air leakage; check fan bearing lubrication, loose parts, noise, etc. Are fan wheel and housing clean, and is painting needed?

External Parts—Check external insulation for leakage, etc.; motors and starters for cleanliness, wear, and lubrication; pumps, piping, and valves for insulation, leakage, etc.; pump bearings for alignment and lubrication, belts for condition of sheaves and belt guards; air compressors for operation, mechanical condition, cleanliness, settings, etc. Are water filters, air filter, and cleaning equipment in order?

Air Distribution Ducts—Check for condition of insulation, loose duct hangers or supports, movement and lubrication of volume dampers; operation of fire dampers, adjustment of deflection vanes, access doors of distributor ducts for tightness.

Control Systems—Dismantle, clean, and repair instrument mechanisms, and remote elements according to manufacturer's instructions.

Condensers—Check water-cooled condensers for cleanliness of water side, valves, strainers, and drains. Test water regulating valves to find if they operate freely and are free from leaks or obstructions. On air-cooled systems check condenser surfaces and protective screens thoroughly. Look for obstructions in air ducts supplying condensers. On evaporative condensers check for cleanliness of interior parts, inlet and outlet screens, and for rust and corrosion and need for painting. Check hood, cowls, duct connections, fans, motors, pumps, bearings and drives. Check water distribution, supply, level, float valve operation and drains and overflow for obstructions.

Water Chillers—Check cleanliness of water side, condition of insulation, and control devices.

2. ATOMIZER SYSTEMS:

Nozzles—Don't try to change manufacturer's adjustments.

Cocks—Open cock assembly, clean parts, and reassemble when cocks are stuck. Don't force parts or tighten nuts excessively.

Turbo Tanks—Clean out tanks as often as quality of the water demands. Clean strainer in bottom. Cover tank.

Air Compressors—Use only the best grade and minimum amount of compressor oil for cylinder lubrication. Keep

water in waterjacket and drain once a week.

Aftercoolers—Maintain proper circulation of water through aftercooler to insure maximum cooling.

Air Receivers—Check gage for water level in air receiver. Maintain a pool in bottom of receiver to catch dirt, oil and moisture.

Cleaning Air and Water Lines—Blow out water lines with compressed air at least once a year. Draw off moisture condensate from air lines at cocks at ends of air lines.

3. HIGH-DUTY HUMIDIFIER SYSTEMS require additional care as follows:

Inspecting and Oiling—Inspect, clean and oil all moving parts regularly. Schedule cleaning and oiling to meet operating conditions.

Abuse of Parts—Use wrench designed to remove nozzle and don't tap with hammer as pin may be thrown out of alignment with the orifice. Use special wrench on automatic diaphragm valves or angle cocks and not pipe wrenches.

Cleaning—Shut off water and motor. Clean motor and outside casing. Lower upper casing and clean cast-iron ring, nozzle, and outside of strainer casing. Clean inside casings, especially on passages between the inner bell, middle bell, and outer casing. Raise upper casing, secure in place, and remove and clean cone. Clean pan down to conical copper strainer and remove dirt to a bucket, not through drain pipes.

Drain Lines—Flush drain lines at least once a month.

Nozzle Assembly—Clean nozzle assembly once a month. Remove nozzle and strainer assembly and clean. Clean base nut and standpipe.

Motor—Oil motor every week. Remove dirt and lint from motors.

Pan—Clean pans, stays, gutters.

4. CENTRIFUGAL HUMIDIFIERS:

Motors and Fan—Oil and remove dust and lint weekly.

Casing, Pan and Grid—Clean and polish once a week.

Distributing Disk and Lifting Cone—Clean and polish once a week.

Fire-Protection

INSURANCE COMPANIES and other agencies such as the Corps Area plant protection officers and the F.B.I. have a great many recommendations to make on fire protection. Although textile plants have been well equipped and inspected, coordinated effort and the placing of responsibility is necessary to handle fires from sabotage or air attack. Be sure your plant is prepared to meet any emergency. Check your plant on the following:

Fire Service Organization—Have you a fire chief, such as your master mechanic, in charge of all fire protection? Does he live near the plant? Does he have assistant chiefs on all shifts? Do overseers and second hands have definite responsibilities should a fire break out in their departments? Are fire wardens designated in each department?

Automatic Fire Fighting Equipment—Are sprinklers installed in all recommended places? Are sprinkler heads of the proper type for the type blaze expected? Are all cut-off valves marked and located? Do responsible men in the fire fighting organization know where the valve is and the sections that they control? Do you have cards posted in each department telling the valve that controls sprinklers? Are fire doors in working order?

Manual Fire Equipment—Do you have enough soda-acid and carbon-tetrachloride type extinguishers, water buckets, sand buckets, shovels, water connections and hose to fight incendiary fires? Is the hose tested regularly and do you have the proper seals or locks on hose houses? Are they well distributed? Is the water level of sprinkler storage tanks checked and maintained?

Mobile Equipment—Are carts, trucks, etc., on hand containing specially designed equipment to fight incendiary bombs, as well as the usual extinguishers, pumps, respirators, protectors, tarpaulins, protective clothing, axes, crowbars, etc.? Investigate the use of mobile reels and chemical engines if the size of the plant warrants their use.

Alarm Systems—Are both manual and automatic fire alarms installed? Are special signals arranged for through plant engineer or electrician? Do you test them out in fire drills?

Pumps—Are fire pumps so installed that they will function when lights are extinguished during black-outs?

Inspection—Does your master mechanic or yard foreman inspect all fire equipment daily and submit a written report? Do you impress your overseers with the seriousness of maintaining fire equipment in first-class condition? Do you keep enough auxiliary fire-fighting equipment in stock to make ordinary replacements and some emergency replacements?

Drills—Do you have frequent and unexpected fire drills? Are you there to see the results for yourself? Do you arrange for instruction of the fire organization at regular periods? Does the fire chief submit his recommendations periodically?

Safety—Are there first-aid facilities in all departments to care for injury due to fire? Is the fire brigade or other organizations trained in first aid.

Intra-Plant Transportation

INTRA-PLANT TRANSPORTATION must be adequate and all equipment maintained at the highest degree of efficiency if material is not to pile up and cause serious bottlenecks and fire hazards. Check equipment as follows:

Overhead Tracks and Carriers—Keep track system in alignment; and tighten hangers, bolts, and stops periodically. Grease carrier pulleys and swivels regularly; also lift chains, pulleys, traction motors and track switches. Paint track structure, carriers, lifts, switches, pulleys often enough to prevent corrosion. Replace worn ropes or chains on switches, and don't wait for them to break.

Conveyors—Gravity or power conveyors have roller or ball bearings that should be greased regularly. Clean and paint frames and supports at regular intervals.

Trucks—Keep hand trucks, cotton trucks, wooden fiber and canvas rolling trucks cleaned and oiled on a regular schedule. Test wheels to see if they can turn. Repair broken panels or sides. Paint trucks and stencil department names on sides.

Hydraulic Lifts and Trucks—Grease and paint hydraulic lifts and trucks regularly. Maintain oil in pump and see that the packing is tight.

Ramps—Keep flooring on ramps in good repair. Provide guard rails for ramps. Divert workers from using ramps by providing other suitable passages for them.

Chutes—Special chutes are often provided for transfer of materials from second or third floor levels to lower levels. Keep outside chutes painted and protected from the weather. Check conveyor pipes for opened cotton for protection against the weather, especially wind damage.

Platforms—Clear loading and unloading platforms of materials as rapidly as possible. Do not use platforms for storage.

Elevators—Keep safety doors in operating condition. Repair flooring in elevator as soon as needed. Test cables and knock-offs. Paint at regular intervals and post safety rules. Grease tracks and mechanical drive on schedule. Designate one person on each shift as an elevator operator.

TEXTILE EQUIPMENT NEWS

Sintered Iron Parts and Bearings

Powder metallurgy substitutes for critical materials in products produced by Bound Brook Oil-Less Bearing Co., Bound Brook, N. J., in the form of small iron parts and bearings. These sintered parts of powdered iron eliminate need of machining and are satisfactory substitutes for critical, restricted materials. With three distinct formulas, these products are adaptable to a wide variety of operating conditions and applications. Specifications provide porous iron alloys containing from no tin and copper to a 10% maximum. This new material can be had either in both parts and bearings with or without lubricant impregnation, 25% oil content being maximum.

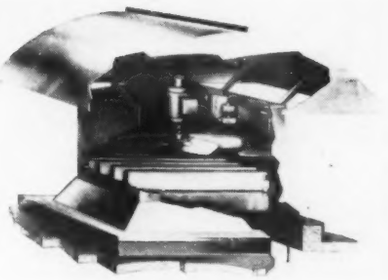
Wax-Fortified Mill White Gloss

A tough, high-quality industrial gloss enamel of extreme whiteness has been developed by S. C. Johnson & Son, Inc., Racine, Wis. Wax-impregnated to resist dirt, moisture, marring, soiling, this enamel is very simple to clean and can be repeatedly washed without materially losing its high light-reflecting qualities. Application can be made either by brush or by spray methods over all mill interior surfaces and on the walls of washrooms, offices, etc., where cleanliness and washability are prime considerations.

Blackout Ventilator

Ventilators designed to prevent the transmission and reflection of illumination from a mill interior, are announced by Carrier Corp., Syracuse, N. Y. These ventilators are available in three types as follows:

Carrier exhaust ventilators remove hot humid air from mills in the summer by exhausting through the roof. Supply ventilators are designed to replace hot air within a mill with relatively cooler air from outdoors. The air is drawn in at the roof and circulated to the working areas. Tempering ventilators warm and deliver air to the mill and are intended for cold weather. Air is drawn in at the roof and circulated uniformly, providing needed ventilation with tempered air to prevent drafts and cold spots in a mill.



Blackout ventilator (Carrier).

Each type of ventilator is available in three standard capacities—10,000; 15,000; and 20,000 cu.ft. per min.

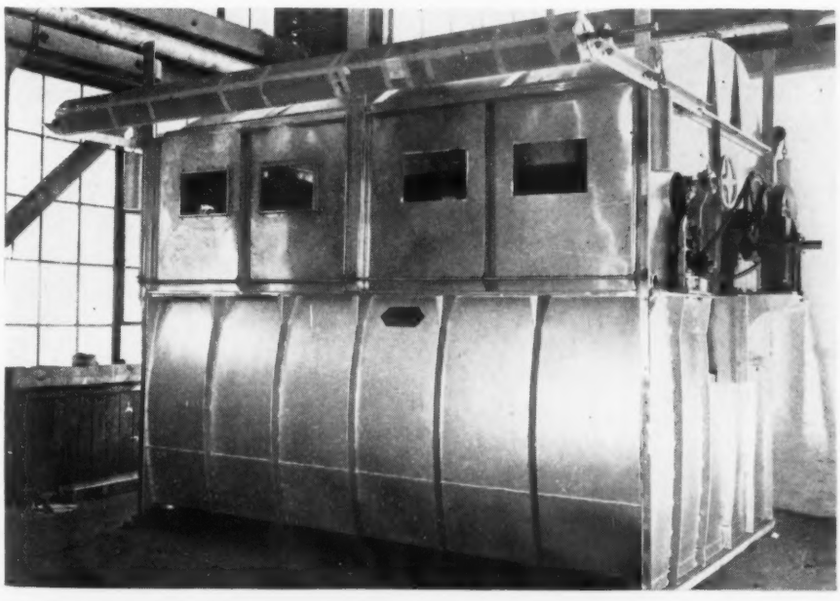
Infra-Red Heat Lamps

A new line of infra-red heat lamps, designed in keeping with the limitations imposed by the WPB, has been announced by the Birdseye Division, Wabash Appliance Corp., Brooklyn, N. Y. The new line includes six clear types, three ruby types, and four reflector types. All feature the M-type tungsten filament for uniform heat distribution and have their bases reinforced with asbestos-lined mechanical straps to withstand the high temperatures of tunnel installations. The reflector types have built-in reflector linings of pure silver sealed inside the bulbs for protection against dimming and tarnishing by fumes or dirt. Average burning life on all lamps is in excess of 6,000 hours.

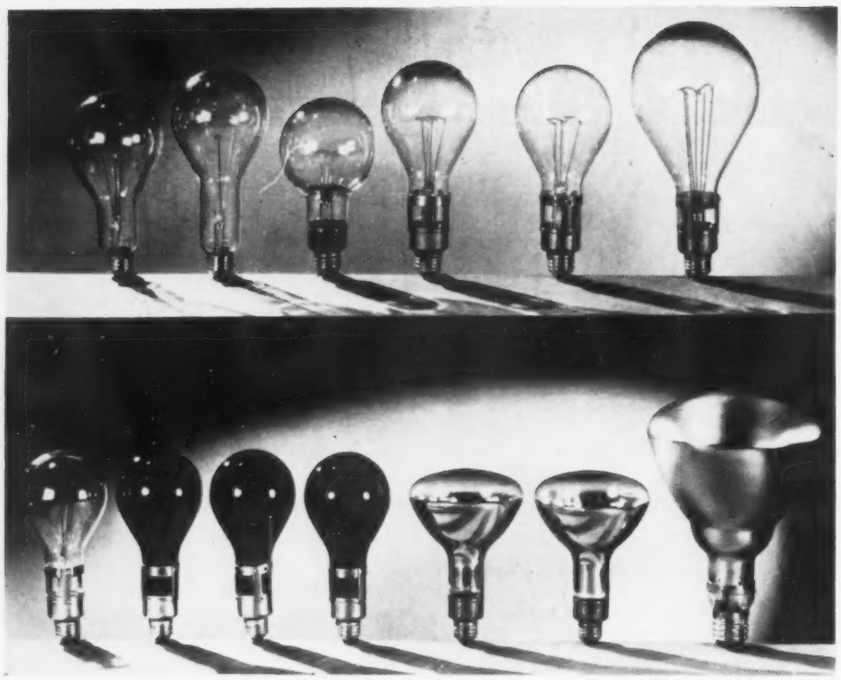
The Birdseye heat lamps produce infra-red and near infra-red rays that are converted into a deeply penetrating kind of heat as soon as they strike an object. Instead of heating from the surface slowly inward, the action is reversed—the infra-red rays penetrate deep down into the surface of fabrics and start the drying process from the inside out, instantly and uniformly.

Advantages claimed for infra-red drying of fabrics on tenter frames are speed, ease of operation, and economy. This system can also be used for setting

INSTALLS LARGE DYE KETTLE



STAINLESS STEEL dyeing machine recently installed by Signal Knitting Mills, Chattanooga, Tenn. This machine, which is of the all-enclosed type, built by Rodney Hunt Machine Co., Orange, Mass., is equipped for washing, dyeing, and bleaching knitted fabrics. It is believed to be one of the largest units now in operation in the world for this type of work. The curved sides, an unusual construction feature, are said to give added strength to the tub when filled with dye liquor.

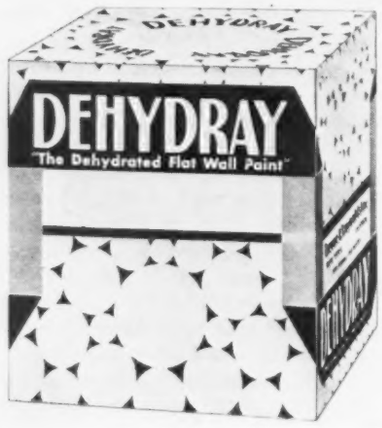


Types of infra-red lamps available (Wabash)

and baking various coatings and resins applied to fabrics in finishing. Operating cost is reported lower since full heat operation is started instantly with no fuel or time lost in preheating. Since lamp installations are lightweight, they can easily be moved, and since they are more compact, they usually occupy much less floor space than conventional types of drying equipment.

Mill White

Savings in time, material, and labor are cited as advantages of a new Dulux High-Hiding Mill White, reformulated by E. I. du Pont de Nemours & Co., Inc., Finishes Division, Wilmington, Del. This paint has greater hiding qualities, and it has been suggested that one coat will hide on paint jobs which normally required two coats. Good original whiteness makes possible a 87% light reflection factor.



Dehydrated paint packed in cardboard containers (Devoe & Raynolds)

Dehydrated Paint

A completely dehydrated paint, called Dehydray, has been developed by Devoe & Raynolds Co., 44th St. and First Ave., New York. This new product weighs about half as much as liquid paint and bulks considerably less, which is a saving in freight space and rates to make more room for shipment of vital war materials. It is stated that the dehydrated paint can be packed in cardboard cartons and because it contains no water, cannot freeze. It covers all types of interior wall surfaces including cement, brick, wallboard, and plaster.

Air Circuit Breaker

A streamlined breaker has been developed by General Electric Co., Schenectady, N. Y., which may be removed and interchanged with another breaker unit having different load conditions in an elapsed time of three minutes.

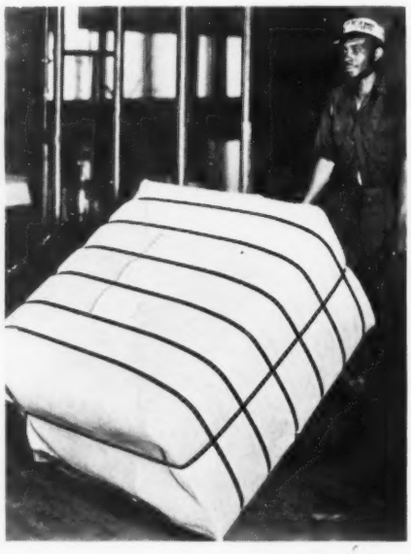
Present-day capacity operation necessitate that all equipment be operated continually without undue interruptions. All 15,000 and 25,000 ampere interrupting-rating breakers of this type are interchangeable. Breaker units may be removed for inspection in only a few minutes time and inspected away from live electrical parts carrying large currents and high voltages. A change in current rating requires only the replacing of the overcurrent device with a new one. Long and expensive production delays are held at a minimum using interchangeable parts in this circuit breaker.

Kraft Baling Paper

Paper baling material to replace burlap bagging as a covering for baled gray and finished goods, has been developed by Fulton Bag and Cotton Mills, Atlanta, Ga.

The product is a laminated paper consisting of two thicknesses of 30-lb. Kraft paper held together with 30-lb. asphalt which acts as an adhesive or binder. The finished baling paper is available in either a crinkled or a flat finish and in rolls varying in standard width from 32 in. to 48 in. The weights for the paper vary from 30 lb. to 45 lb. per ream respectively, according to the width.

Bale covering of this type may also be used for wrapping cloth rolls and for lining boxes as it is strong and waterproof because of the laminated construction with asphalt binder.



Completed bale wrapped with Kraft paper and steel bound (Fulton Bag and Cotton)

Useful Accessories for Textile Mills

A large inlet bifurcator for installing in exhaust lines, such as those used in dye houses to remove fumes and hot air, has been developed by American Machine and Metals, Inc., East Moline, Ill. This unit may be installed in any position from horizontal through vertical.

A super phosphor has been developed that is considerably more efficient in ability to convert invisible ultraviolet into visible light than are powders heretofore used in fluorescent lamps, according to General Electric Co., Neal Park, Cleveland, Ohio. The new super phosphor is used as a coating on the inner surface of G-E Mazda F lamps and is said to have the added advantage of employing minimum amounts of critical war materials.

Quick patching of cracks, ruts, and shallow holes in concrete floors can be made using Smooth-On No. 7B Quick Patch Cement which hardens quickly and adheres firmly to the surfaces with which it is in contact. This product is extremely wear-resistant as well as dustproof, oil-proof and water-proof and is a product of Smooth-On Mfg. Co., Jersey City, N. J.

Quickly adjustable shelving is now offered in wood by Lyon Metal Products, Inc., Aurora, Ill. This shelving is made in open and closed types of solid hard wood. Side panels and back panels on the closed types are ¼ in. plywood.

Photo-electric smoke indication and elimination control robots for operation on 115-volt alternating or direct current, has been introduced by Rehtron Corp., Chicago. Model SC-301, the indicator signal type, is designed to indicate smoke density in breeching or stack and provides for an immediate bell and/or light signal when smoke exceeds the maximum allowable density. This warns firemen to take corrective measures necessary to avoid violation of Smoke Ordinance and prevent waste fuel.

To prevent rust and provide clear water from any metal tanks or pipes and from lead, brass, or black, galvanized or cast-iron water systems, Sudbury Laboratory, South Sudbury, Mass., has recently brought out a new product, known as Aqua-Clear. Aqua-Clear also is recommended for clearing out loose rust from old, rusty tanks and pipes.

Mill Maintenance Section

Maintenance of Cotton Fire Hose

Proper fire-fighting equipment must be maintained ready for all emergencies. Outlined in a booklet published by United States Rubber Co., dealing with conserving rubber, is approved practice in caring for rubber lined, cotton fire hose.

Life of this type of fire hose will be improved if it is not stored near hot radiators or piping. If it is stored in a rack, use as few folds as possible and change their position every three months so the rubber lining will not be permanently strained at the folded points.

Every six months the hose should be removed from the rack, water should be run through it, then it should be thoroughly dried again. This will help to keep the rubber lining from drying out.

When hose of this type is used at a fire, guard against chafing of the cover by vibration against the ground or floor. After use, the hose should be carefully examined, any oil or grease should be removed with soapy water and a scrubbing brush, and the hose should be carefully drained and dried before being put back into storage.

A leaking stand pipe valve where the hose is customarily connected will put the hose in danger of becoming waterlogged or frozen. Valves should be inspected periodically.

CARE FOR YOUR STEEL LOCKER

Replacements on steel lockers are difficult to obtain and wood substitutes may have to be accepted. This poster issued by Penn Metal Corp. of Penna. is available for hanging in the locker room to impress on users their responsibility in making them last for the duration.

Steam Hose in Dyehouses

Avoid subjecting steam hose to prolonged periods under excessive pressure, is the advice contained on a wall chart prepared by Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc. As rubber hose is vulcanized at approximately 265°F., maximum service cannot be expected when it is subjected to pressures which are much above 125 lb.

The following table shows temperatures of saturated steam at various pressures at sea level:

Temperature of Saturated Steam

lb. pres.	deg. F.	lb. pres.	deg. F.	lb. pres.	deg. F.
10	240	60	307	100	338
20	260	65	312	125	353
30	275	70	315	150	366
40	288	75	320	200	388
50	298	80	325	225	398
55	303	90	330	250	406

Use Old Generating Equipment

Wartime production has necessitated expansion of many textile mills with resulting demands on electrical power. Those mills that have old generating equipment and desire to replace it in service should follow the precautions outlined in the September issue of *Allis-Chalmers Electrical Review*, published by Allis-Chalmers Mfg. Co.

The winding of the generator should be carefully inspected for deterioration, and all dirt removed with a compressed air stream or by cloth dampened with a suitable cleaning fluid. If the winding is physically sound, it should be dried at about 75° C. until insulation resistance becomes constant. Drying can be done in one of three ways: 1. External heat source and blower, 2. passing d.c. current through winding, or 3. running

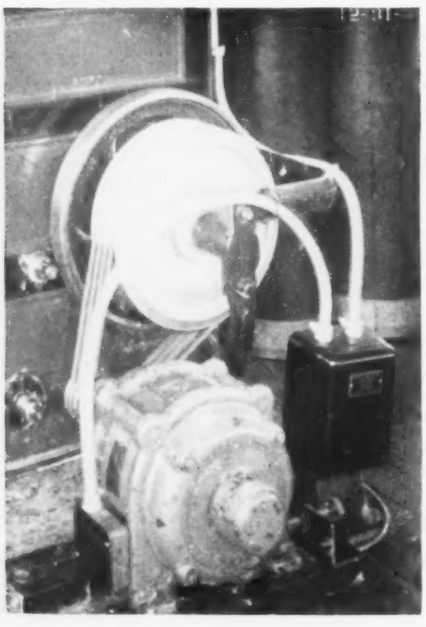
generator with stator short-circuited. The minimum safe dry resistance for a 5,000 kva., 6,600 volt generator at 75° C. is 6.3 megohms for the stator and one megohm for the rotor.

High insulation resistance does not insure freedom from damage; hence it may be desirable to test phase-phase and phase-ground insulation; and this turbo-generator, should be tested with about 8,200 volts for one minute. Then several coats of a good air-dry insulating varnish should be applied.

Maintenance Prevents Fires

Electrical fires in textile mills, particularly in cotton mills, may be reduced to a marked extent if attention is given to electrical maintenance. A study made by Factory Mutual, and reported in the September issue of *Factory Mutual Record*, states that 33% of these fires started in motors, 32% involved control switches, 22% were in distribution circuits, and the remainder involved improper fuse arrangements, the breaking of lamp bulbs, or overheating of materials of combustionable nature in contact with lamps.

In each of these fires originating in electrical equipment, one or more factors seemed to be involved. The first was the presence of fine cotton fibers in and around the apparatus, which ignited readily when a spark or overheating occurred. Another was the fact that some devices had been put out of adjustment by heavy vibration of machinery. In some cases a lack of ordinary maintenance was apparent, and in some others the lack of inspections had permitted troubles to develop where they could have readily been remedied in time.



Electrical apparatus should be inspected at regular intervals.

A study of fires that have occurred, however, point out certain specific things which must be looked for in the inspection and maintenance of electrical equipment. A motor which is excessively hot, for instance, indicates overloading and danger. Equipment which begins to show signs of wear, or is exposed to rough treatment, needs attention. So do switches which are not enclosed, and which have worn or pitted contacts, or parts which have worked loose. Among other undesirable features are unprotected wiring, worn insulation, loose connections, unguarded lamp bulbs, and open fuse boxes harboring lint deposits.

Obviously, for the safety of manufacturing operations, the electrical apparatus should be under the care of an expert electrician with sufficient time to do a good continuing job of inspection and maintenance. Then, too, cleanliness around machines is always important, especially around electrical apparatus.

New Dyes and Chemicals

Proofing Compound for Canvas and other Fabrics

For rendering canvas and other fabrics waterproof, flameproof, and rotproof, Philadelphia Textile Finishers, Inc., 1600 Arch St., Philadelphia, has introduced a new compound known as Phil-Pro-Tex. Materials treated with this compound are said to meet all requirements of Federal Specification CCC-D-746. One of the advantages cited for Phil-Pro-Tex is that it increases the tensile strength of cotton fabrics from 20 to 25%. It is stated further that the treated materials will not harden, crack, chip, or peel at low temperatures; will not become gummy, tacky, or sticky at humid, high temperatures; and will resist weathering. Philadelphia Textile Finishers will supply the compound to other finishers or will apply it to fabrics on a job or commission basis.

Finishing Agent

Development of a new finishing agent derived from petroleum has been announced by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. This compound, known as Avitone A, is said to compare favorably with sulphonated tallow. Du Pont states that for textile purposes, use of 100 lb. of Avitone A will release 140 lb. of tallow from which 10 lb. of glycerine needed for military purposes can be recovered.

Resins for Proofing Cotton Fabrics

For use in proofing cotton fabrics, two new resins, consisting of specially processed coumarone-indene polymers, have been introduced by the Neville Co., Pittsburgh, Pa. Known as Nevtex 10 and Nevtex 90, the new products are recommended particularly for use in proofing cotton duck to meet Federal Specification CCC-D-746.

Physically, each of these resins is a liquid of medium viscosity readily handled at all normal atmospheric temperatures. Both of these resins are actual plasticizing type resins and hence impart flexibility to film-forming resins, especially at low temperatures. No further plasticization is necessary. They are non-drying resins and contain no volatile solvent, although upon request they can be furnished in aromatic and petroleum type solvents. The difference between these two resins is their chemical nature, which causes variations in their compatibilities and solubilities.

Nevtex 10 is particularly well suited for compounding with hydrocarbon type plastics, resins, and waxes, whereas Nevtex 90 is suitable in part for such materials but more especially with ester and other oxygen-bearing type polymers, such as the vinyl resins, alkyds, and the cellulose ethers and esters. Nevtex 90 is useful for solubilizing Nevtex 10 with other materials, especially film formers with which Nevtex 10 is normally incompatible. Moreover, Nevtex 90 is a powerful solubilizing agent for chlorinated paraffin wax and film formers which are normally incompatible with chlorinated paraffin wax.

Germicidal Agent for Treating Textiles

Development of a germicidal agent suitable for use in treatment of textiles has been announced recently by Perma-Aseptic Process Co., 247 Park Ave., New York. This compound, known as

Perm-Aseptic, is said to have fifteen times the germ-killing power of phenol and to have germicidal activity under a wide range of conditions. The compound is supplied in the form of a colorless, odorless liquid, which is nontoxic under the recommended conditions of use and is relatively stable. Laboratory tests indicate that cotton sheeting treated with Perm-Aseptic inhibits growth of all test organisms in an area slightly greater than required by Government standards even after 40 washings in 5% soap solution for 5 min. at 180° F. Sandbag fabrics treated with the new agent are said to possess excellent inhibitory values against mildew. After leaching for 120 hr. under running water plus 15 vigorous washings and rinsings, the fabrics showed no discloration due to mildew growth, and breaking strength was 90% or higher of original strength of the sandbag fabrics.

Dye for Acetate Rayon

General Dyestuff Corp., announces the following new product: Celliton Blue BB Extra Conc. for Printing, a dye for producing bright blue prints of good fastness to light and fairly good fastness to washing on acetate rayon; it yields excellent results when used in combinations to obtain navy shades.

New Publications

A Textile History Digest

THE STORY OF TEXTILES, by Mary Evans; Home Economics Series of Columbia University; Little, Brown & Co., Boston; 44c., with 20% discount on quantity.

Written for student readers, this colorfully-illustrated booklet gives a passing review of textiles from "past" to present. It stresses the historical interest and beauty of design and color of textiles of many countries for many years and gives a cursory picture of present-day and future fabrics.

Hardly geared to the thinking of the wartime textile manufacturer with his numerous problems, it is, nonetheless, a handy edition for the average home or classroom. Recommended for the top of a sub-deb Christmas stocking.

A Free Visit Back Home

SMALL TOWN SOUTH, by Sam Byrd; Houghton Mifflin Co.; Boston; $2.75.

Sam Byrd went away from home and got big, but he never did lose that psychological touch which some from small southern towns have with folks back home. And so in the depths of homesickness for those he had left behind, Sam Byrd goes back. Once there he finds many changes, all of them sad, but he keeps his sense of human values and his sense of humor as he tells of them.

Sam Byrd proves himself a real artist in this, his first book. He paints so clearly the picture of not just his small town but of any small town below or above the Mason-Dixon Line. And to each of us who has left some hamlet for the city, he has given a free visit back home.

After a hard day, and discouraging war news, read Small Town South. It's good and it's tonic, for no matter what happens life in the small town south is apt to continue in its routine cycle. In these days that very thought is healing.

The Folks Who Built the South

RED HILLS AND COTTON, by Ben Robertson; Alfred A. Knopf, New York; $2.50.

"By the grace of God, my kinfolks and I are Carolinians," says Ben Robertson in his opening sentence. And for the next 300 pages he amplifies this simple statement, which in itself is almost like a prayer. Tales of his lusty ancestors, anecdotes of his kinfolks, reminiscences of his own boyhood, the locale of all being in the beautiful Keowee Valley between Glassy and Six Mile Mountains, make up the chapters of Red Hills and Cotton.

It is easy to understand why Mr. Robertson wrote this book. He has been to far places and he has seen much of the horrors of war, and under those circumstances it is natural for one to recall the pleasant, lazy days of youth; the stories of one's own people whose strength and bravery have been passed down from generation to generation. But this book is more than just a memory. It carries a message.

Red Hills and Cotton is written about the substantial folks of the South—folks who built the South and who later had to rebuild it, and who, after this war, will have to rebuild again. And the readers of this book will take heart to know that such people still exist in the South, people who know that in times of war they must work and pray and give and fight. And after the war rebuild with courage and conviction.

"Manpower" Under the Microscope

PERSONNEL MANAGEMENT AND INDUSTRIAL RELATIONS; by Dale Yoder; Prentice-Hall, Inc., New York; $4.25.

While front pages teem with the dynamics of manpower, in the allocation sense, Dale Yoder sits calmly in his carrel carefully considering manpower in the specific sense. He produces a technical, academic text book for graduate students of economics . . . and it ought to be in the hands of every personnel administrator and labor relations man in the country!

Objective and theoretical, filled with extensive charts and suggestions for collateral reading and always complete in description, Mr. Yoder's book is by no means a contented study of ancient history in labor relations. It touches upon some very new methods of selecting men, appraises the "crusading" policies and plans of the unions—and, of utmost importance, delves into the psychological aspects of employer-employee relations to bring forth a thoughtful evaluation of collective bargaining and how to go about it.

You cannot expect this volume to take the place of the brains in your organization, but it is a superb reference book to have around when you, the foreman, or the administrator need a guide to previous thought and action in the field of industrial personnel relations. Neither pro-labor nor pro-management, this text book for the advanced thinker attempts to prove that the basic interests of both are always harmonious and often mutual. The techniques for putting this theory into practice are the concern of the book.

Research: Destroyer and Creator of Wealth

INDUSTRIAL RESEARCH; F. Russell Bichowski; Chemical Publishing Co., Inc., 234 King St., Brooklyn, N. Y.; $2.50.

There is left but one possible source of new wealth to replace the wealth lost in war. This source of new wealth is the discovery of new products to manufacture and sell. It is from the research laboratory that this new wealth must arise. Proceeding from this thesis, the author discusses the social importance of research and outlines the gen-

eral principles underlying the organization and management of industrial research. Among the subjects considered are the differences between research and engineering and development, putting across new inventions, research for small companies, the place of research in the company organization, research personnel, and technical control of the research laboratory. The book, which is based largely on the personal experience of the author, is a must for both research directors and top executives.

ON AN OFFICIAL VISIT to the Foxboro (Mass.) Co., Sept. 23, Rear Admiral E. J. O'B. Croker, R. N., Chief of the British Admiralty Technical Commission, at Ottawa, congratulates Edgar H. Bristol, president of the company, on the contribution which Foxboro men and women are making to the success of British naval operations, particularly against the U-boats.

News of Suppliers

Bahan Textile Machinery Co., Greenville, S. C., is erecting an addition to its plant on Hudson Street to be used for office space.

Amos H. Hall & Sons have removed factory and office to new quarters at 5500 North Water St., Philadelphia, Pa.

Wickwire Spencer Steel Co., New York, has appointed George L. Randall, advertising manager, as public relations manager, in addition to his duties as advertising manager.

Pennsylvania Salt Mfg. Co., Philadelphia, reports for the year ended last June 30, net sales of $19,552,300, largest in the company's history, and net earnings after taxes of $1,421,170. Sales were 19.7% above the preceding year, but this increase was accompanied by a decrease of 13.8% in earnings. The report attributes this to higher production costs and taxes without a commensurate increase in selling prices.

Jenkins Bros., Bridgeport, Conn., have named Charles G. Chamberlain as general sales manager with offices in New York. He has been publicity manager of Jenkins Bros. since 1940. He joined the company in 1929.

James F. Lincoln Arc Welding Foundation, Cleveland, Ohio, announces that textile men figured prominently in the awards given in the nation-wide scientific welding-study program sponsored by the Foundation. Principal textile awards were to Richard W. Stanley, American Viscose Corp.; W. E. Shefelton, R. D. Cole Mfg. Co.; William Shaw of Providence, R. I., for a series of new devices to improve the performance of a cotton roving machine; and Francis A. Helin, Bagley & Sewall Co., for a new type steam-heated cylinder for drying textiles.

A. B. Carter, Inc., Gastonia, N. C., manufacturer of the Boyce Weavers Knotters, advises that its case against Knotters, Inc., L. W. Cloniger, and W. A. Huffstickler came up for trial in the U. S. District Court, Charlotte, N. C., on Oct. 19, and by consent of the parties, the Court held the patents on the Boyce Weavers Knotters valid and infringed by the defendants. As a result, an order was signed assessing damages against the defendants, and an injunction was ordered enjoining the defendants from further infringement of the patents on the Boyce Weavers Knotters.

B. F. Goodrich Co., Akron, Ohio, has established a new sales district for the National Sales and Service Division for the Pacific Coast area, with the exception of Seattle, and Donald W. Fairbairn has been named district manager. Headquarters will be in Los Angeles.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has published a health and safety manual devoted exclusively to the problems of women in industry. One section deals with the proper attire for women in the shop, stressing the new safety clothing designed by the health and safety division of the Allis-Chalmers industrial relations department. The manual also treats the proper exercises for maintenance of good physical condition. Other sections discuss hazards to be avoided in various occupations, including that of office workers.

Carrier Corp., Syracuse, N. Y. has appointed Miss Helen G. Curran to its Personnel Department staff. Miss Curran has lately been assistant personnel manager of the New York Hospital with 800 women under her direction. Previously, she was section manager for R. H. Macy & Co., New York. Car-

VEEDER-ROOT, INC., gets "E" award: Display of pennant after presentation. At left, Col. Conrad E. Snow, Signal Corps, who presented the award, and, at right, Graham H. Anthony, president of Veeder-Root, Inc., who accepted it on behalf of the company.

SAVE and SALVAGE

Next to producing, American industry can do two other important war jobs—Save and Salvage—

. . . Savings mean more War Bond purchases and it also takes the form of production economies. . . War breeds extravagance—and extravagance can lose this war.

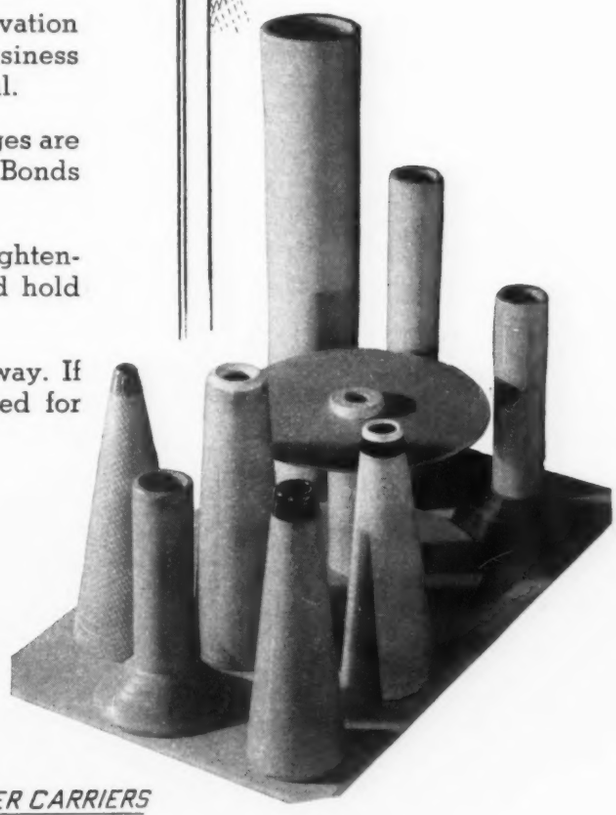
Salvage means more—Scrap drives—rubber drives—tin can drives—paper drives—and others—by *everybody.*

SONOCO believes saving, conservation and salvage are important in business at any time—today they are vital.

10% of SONOCO salaries and wages are going into the purchase of War Bonds every pay-day.

Factory operations have been tightened up to speed production and hold down costs . . .

Nothing is wasted or thrown away. If it can't be reused, it is salvaged for Uncle Sam.



sonoco
SERVES THE WORLD
PAPER CARRIERS

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

rier's enlarged Personnel Department is under Ralph Ebbert, as director.

Westinghouse Electric & Mfg. Co. has appointed Ralph R. Brady as manager of the commercial engineering department at its Lamp Division, Bloomfield, N. J. Mr. Brady succeeds D. W. Atwater, recently appointed manager of the new illuminating engineering department. Westinghouse also has appointed A. E. Hitchner, former manager of the Los Angeles office, to be assistant to the manager of the company's industry sales departments with headquarters at East Pittsburgh.

Pittsburgh (Pa.) **Plate Glass Co.** is celebrating this year the 50th anniversary of its house organ "Pittsburgh Plate Products," a bi-monthly publica-

Front cover of the 50th anniversary issue of "Pittsburgh Plate Products."

tion which is distributed to more than 120,000 of the company's customers. The publication, started in Milwaukee in 1892 under the name of "Patton's Monthly," has had 50 years of continuous publication and is credited by *Printers' Ink* as being the second oldest continuously published company magazine in the United States. The Pittsburgh publication took its present name in 1933 in order to identify it more closely with company activities in the paint, glass, chemical and brush fields.

Fidelity Machine Co., Philadelphia, has produced a particularly effective piece of business literature marking 31 years of experience of the company. The booklet is copiously illustrated with excellent pictures showing the offices, drafting room, testing and inspecting equipment, the manufacturing facilities in all departments, and the machines and mechanisms manufactured by Fidelity.

TREASURY DEPARTMENT'S recent request for local sponsorship of 24-sheet War Bond posters brought response from more than 2,600 firms and individuals. The campaign was promoted by Outdoor Advertising Association of America who announced that more than 5,000 posters of the first month's design have been ordered. Each poster depicts a piece of military or naval equipment and shows the bond quota for the city or county. Typical of the messages now appearing in the Chicago area is the one pictured, which has been posted on U. S. Highway 54 at the southern limits of Chicago and adjacent to the Riverdale plant of the sponsor, the Acme Steel Co.

American-Marietta Co., Chicago, Ill., has appointed R. A. "Bob" Ornberg, assistant manager, succeeding Z. H. Mischka, who has joined the staff of Russell T. Gray, Inc.

International Business Machines Corp., New York, has appointed James G. Johnston, lately superintendent of its Endicott, N. Y., factory, to the position of general works manager for all of the company's plants.

General Electric Co., Plastics Dept., Pittsfield, Mass., has assigned A. C. Treece, lately head of the Chicago sales office, to Pittsfield where he undertakes a special assignment in the manufacturing division. T. E. Giblin, assistant manager of sales, moves from headquarters at Pittsfield to Chicago.

CARL F. TURNER, who has been appointed field engineer for the Textile Division of the Dayton (Ohio) Rubber Mfg. Co. to cover the New England territory. He will make his headquarters at the district office, 614 Newbury St., Boston.

MacFarland, Aveyard & Co., Chicago, has named O. A. "Dutch" Feldon, authority on merchandising and marketing, as a partner and vice-president in charge of merchandising. He has been for the last 10 years with MacFadden Publications. He began his advertising career with McGraw-Hill Publishing Co., New York.

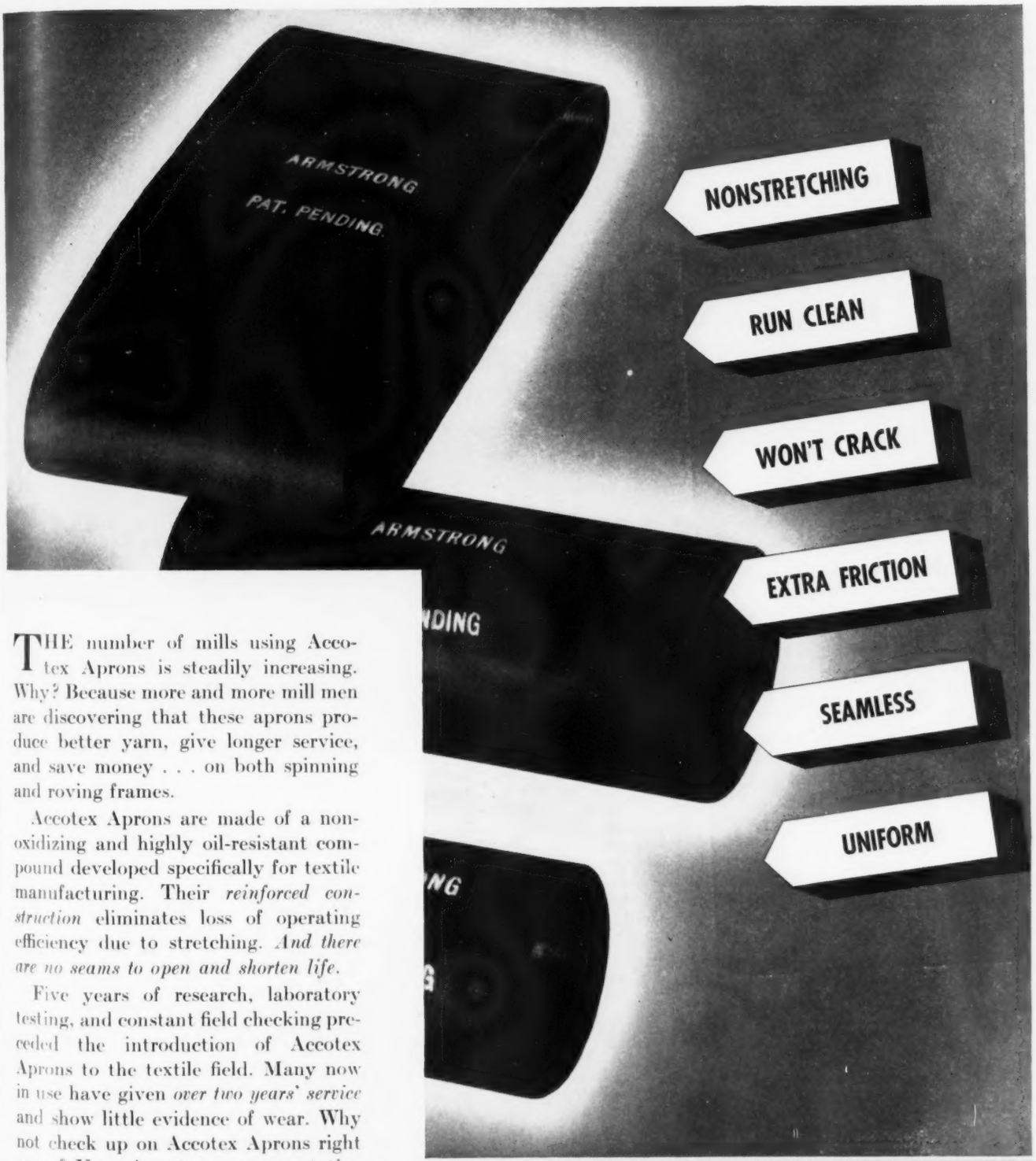
Graham H. Anthony Honored

At the recent celebration of its 53rd birthday, the North Carolina State College, Raleigh, N. C., conferred the honorary degree of Doctor of Engineering on Graham H. Anthony, president of Veeder-Root, Inc., Hartford, Conn. Mr. Anthony, who was graduated from the college in 1914, addressed the undergraduates at the meeting. He stressed his appreciation of the training which the college had given him, and his belief in the important part which N. C. State and its graduates will play in post war responsibilities.

Whitin Receives "M" Pennant

Presentation of the Maritime "M" pennant to Whitin Machine Works took place at Whitinsville, Mass., Nov. 7. This award, made so far to only one other New England company, is in recognition of Whitin's work in production of vertical auxiliary engines for the Victory fleet. Presentation was by C. E. Walsh, Jr., chief of the procurement section, U. S. Maritime Commission, Washington, and included also the Victory Fleet flag and Maritime Labor Merit badges for all Whitin employees.

WHY MILLS ARE SWITCHING TO ACCOTEX LONG DRAFT APRONS



THE number of mills using Accotex Aprons is steadily increasing. Why? Because more and more mill men are discovering that these aprons produce better yarn, give longer service, and save money . . . on both spinning and roving frames.

Accotex Aprons are made of a non-oxidizing and highly oil-resistant compound developed specifically for textile manufacturing. Their *reinforced construction* eliminates loss of operating efficiency due to stretching. *And there are no seams to open and shorten life.*

Five years of research, laboratory testing, and constant field checking preceded the introduction of Accotex Aprons to the textile field. Many now in use have given *over two years' service* and show little evidence of wear. Why not check up on Accotex Aprons right away? Your Armstrong representative will be glad to give you complete facts. Armstrong Cork Co., Industrial Div., Textile Products Section, 927 Arch St., Lancaster, Pa.

ARMSTRONG'S ACCOTEX APRONS
CORK COTS · ACCOTEX COTS

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Detergents from Petroleum is the subject of an article appearing in the September issue of *Dyestuffs*, published by National Aniline Division, Allied Chemical & Dye Corp. The scouring and washing of wool in petroleum detergents is well covered and comparisons made with wool washed in hard water and high titer soap. Of interest to textile men are two other articles appearing in the same issue, one is titled "Practical Acid Milling" and the other "Bleaching Cotton Knit Goods."

Chlorine bleach made within a mill is discussed in a leaflet offered by Embree Manufacturing Co. Emar apparatus is used for manufacturing fresh, chlorine bleach from a saturated solution of common salt by an electrolytic method.

Wax fortified paints and their application, especially in mills where excellent light reflection values are desired, are discussed in a special folder titled "The Why and What of Wax-Fortified Paint," issued by S. C. Johnson & Co., Inc.

Ring changeovers on worsted spinning were discussed and traveler speeds suitable for various types of yarns are listed in an article contained in the October issue of *The Traveler*, published by Victor Ring Traveler Co.

A personnel program conducted by Munsingwear, Inc. is described in the October issue of the *Needle's Eye*, published by Union Special Machine Co. An interesting department in the paper is entitled "War Production News" which assists in solving common problems on manufacturing Army hat bands, comforters, undershirts and sand bags, especially from the standpoint of sewing and fashioning these fabrics.

Development of mercerization by John Mercer is traced in an article in the Ostober issue of *Esso Oilways*, published by Standard Oil Co. of N. J., Pa., and La. In addition, an article entitled "Century Plant," traces the development of the Whitin Machine Co., and should be of particular interest to all textile men.

High-tenacity rayon and Nylon and the part that these materials are playing in national defense are covered in an article in the October issue of the *Rayon Warp Sizing Specialist*, published by Charles B. Johnson Machine Works.

Repair of floors, platforms, aisleways, ramps and steps is covered in a four-page folder issued by Flexrock Co. This folder describes how repairs are made using a cement which may be applied to concrete or wood.

Parachute cloth inspecting machine developed by Hermas is discussed in the September issue of *The Clothroom Spotlight*, published by Hermas Machine Co.

Weave-room use of overhead cranes is illustrated in the September issue of *The Swirling Column*, published by The American Mono Rail Co.

Acid-proof concrete is discussed in bulletin No. 6 issued by Pennsylvania Salt Mfg. Co. Photographs show installations and methods of making use of acid-proof cement where corrosive acids are used.

Floor scales are described in a 4-page leaflet published by Toledo Scale Co. Typical floor-scale installations are illustrated and described.

Economy in the shipping room is discussed in a small 20-page booklet offered by Hinde & Dauch Paper Co. titled, "How to Ship More Economically in Corrugated Boxes." This handy guide shows how shipping economies may be effected without reducing packing effectiveness. Offered by the same company is a handy wall poster listing helpful hints for more economical and efficient sealing and tying of shipping boxes with adhesives, gum tapes, metal staples or metal straps and wire.

Your Own Inspection Laboratory, is the title of an illustrated booklet offered by George Scherr Co. The purpose of this booklet is to assist war production plants in the selection of equipment for the establishment of an inspection department. Items such as gage blocks, projectors, comparators and other inspection department essentials are covered.

Precision balances for accurate and rapid repeated weighings of less than 3 mg. are described in catalog 4550 issued by Roller-Smith Co.

Overhead material handling equipment is discussed in a series of bulletins issued by Conco Engineering Works, Div. of H. D. Conkey & Co. I-Beam trolleys, electric chain hoists, spur gear chain hoists, differential chain hoists, jib cranes, hand power overhead cranes and electric overhead cranes are covered.

Koroseal is discussed in a bulletin published by B. F. Goodrich Co. The chemistry of Koroseal, physical properties, manufacturing flow diagrams, physical effects on various pigments, etc. are discussed. Uses and applications of Koroseal in various industries are suggested. Another booklet entitled "Rubber Guide Book for American War Industry" has also been issued by the same company. Industrial uses of rubber, Ameripol, Koroseal, reclaimed rubber are discussed.

Master mechanics will be interested in a new booklet on "Machining Alcoa Aluminum," published by Aluminum Co. of America. This booklet sets forth the general principles of machining aluminum and its alloys, suggests speeds, feeds and depths of cuts, etc. and contains information of value to the master mechanic in his work about the machine shop.

Colloidal natural graphite, dispersed and in complete suspension in water, is discussed as an industrial lubricant in Bulletin No. 3A issued by National Graphite Co., Inc. Hydrite lubricant is suitable for uses where it is desirable that the surface is dry, subjected to extremely high temperatures and pressure and yet be lubricated.

Spray nozzles are described in bulletin No. 409, recently issued by Chain Belt Co. Use of the nozzle for throwing a fan-like spray of water is described. Such nozzles are ideally suited for use in various wet-finishing processes.

Vinylite resins, their forms, properties and uses, are covered in a 20-page illustrated booklet just released by the Plastics Div., Carbide and Carbon Chemicals Corp. Major types of vinyl resins and the various plastic materials produced are discussed, along with tables of properties and charts showing principal applications of Vinylite plastics.

Water softeners are described in Bulletin W-212-B2 offered by Worthington Pump & Machinery Corp. Hot lime water softeners of the deaeration type are discussed.

Catalog and price list No. 33 for 1942 has been issued by Eastman Kodak Co. covering the various organic chemicals manufactured by this company. Booklet should be of value to every textile chemist who has occasion to purchase organic compounds.

Center controls for motors and switchboards are discussed in a 20-page bulletin No. 411 issued by Trumbull Electric Mfg. Co. These centers consist of vertical troughs in which bus bars carry power into which are plugged combination units of magnetic starters and disconnectors and circuit breakers.

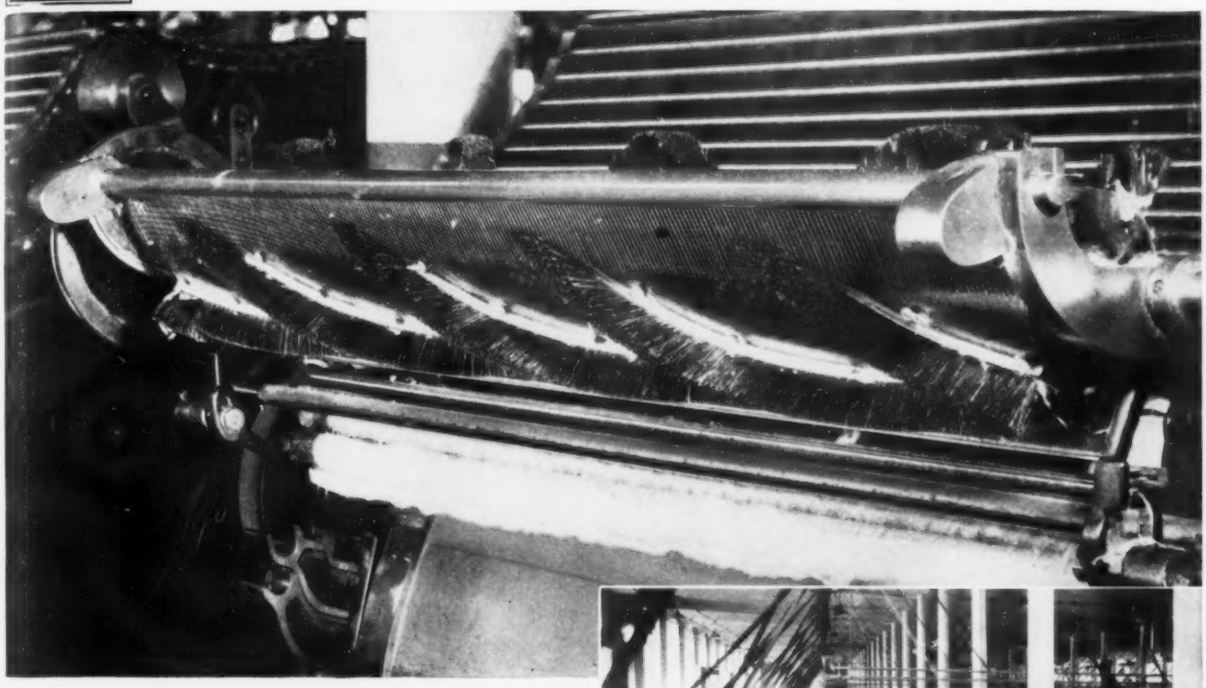
Measurement control instruments covering such fields of application as temperature, flow, pressure, level, humidity, etc. are described in a 48-page catalog No. 95-A issued by The Foxboro Co.

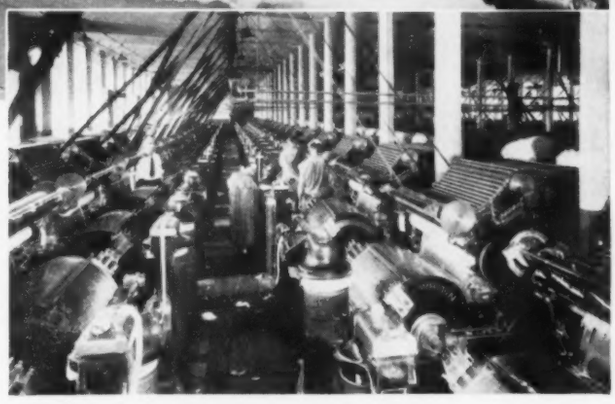
Skylights for color matching and grading are discussed in a bulletin issued by Macbeth Daylighting Corp. These skylights were developed for color matching, color grading and to eliminate errors occasioned by the changeability of natural daylight.

Turret lathes suitable for general maintenance work about a mill are described in Bulletin 1004 titled "South Bend Turret Lathes," and issued by South Bend Lathe Works.

FULLERGRIPT BRUSHES

as applied to revolving-flat brushes on Cotton Cards





Mr. Carder: Your own maintenance department can refill your brushes

JUST follow these simple directions:

Remove old brush core. Put it in a lathe. Trim off the old bristles and sand or turn surface to a suitable smoothness. Give it one or two coats of Shellac for hard, smooth surface.

While the core is still in the lathe, mark four evenly spaced spiral lines on the core. Then drill holes for screws and apply the four strips of bristles along the spiral lines. And it's done! Easy, Economical, Efficient.

Over 3000 Cotton Cards Are In Use Today With Fuller Replaceable Brush Strips

THE Fullergript principle, which packs bristles closely together from one end of a spiral to the other, allows no gaps to permit insufficient cleaning of the flat clothing. More thorough cleaning means better carding.

Brush Strips can be replaced quickly even by machine operators, without benefit of skilled mechanics. Both time and money are saved.

Notice the higher tufts at both ends of each strip. These reach the ends of the flats where there is no card clothing and keep them free of dust, oil and cotton wax. The purpose is to prevent formation of those gummy lumps which lift the flats away from the cylinder. Again, better carding.

OTHER TEXTILE-MILL BRUSHES

Yes, indeed, the Fullergript principle has proved successful in other textile-mill applications—thread-dresser brushes, worsted dabbing brushes, burr-picker brushes, finishing machinery brushes, etc. Write us for details of any of these applications—including the cotton-card brush we have described on this page.

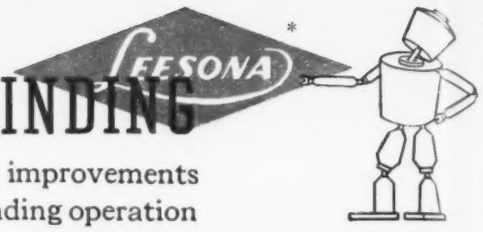
The FULLER BRUSH Company

INDUSTRIAL DIVISION, DEPT. 8C

3594 MAIN STREET - - - HARTFORD, CONN.

THIS IS NO. 36 OF A SERIES ON

GETTING THE MOST FROM WINDING



Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

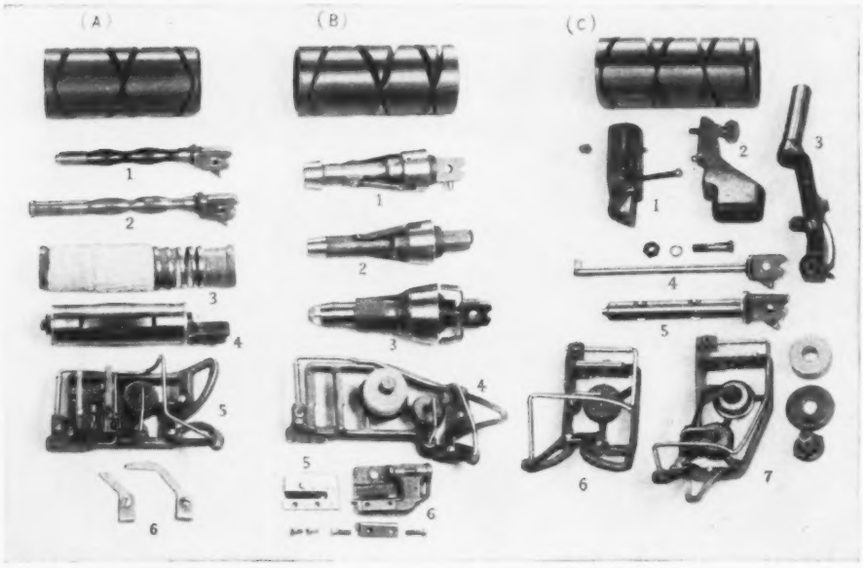


Fig. 1

ROTO-CONER* PARTS AND ATTACHMENTS

THE ROTATING TRAVERSE is a one-piece driving and traversing roll. There is a choice of three groove arrangements which govern the package shape. For parallel tubes, dye packages or wood tubes for twisting, the coils in the groove are uniformly spaced (A Fig. 1); for paper coning, the coils are "full-accelerated" (B Fig. 1); for wood coning, they are "$^5/_8$ accelerated" (C Fig. 1) — a more gradual change in spacing.

It is a simple matter to change from coning to tubing or vice versa. The traverse rolls are always dry and clean, and there are no greasy cams to handle.

TUBING FIG 1 (A)

(1) Holder for $^5/_8$" paper tubes
(2) Holder for $^5/_8$" perforated dye tubes
(3) Special wood plug adapter used with regular $^5/_8$" holder for Franklin springs
(4) Holder for large-diameter (Obermaier) dye tubes
(5) Tension bracket with double slub catcher* (MacColl needle-type and blade-type or two blades)
(6) Traverse shortening finger for short-length packages and yarn waste guard for end of traverse

PAPER CONING FIG. 1 (B)

(1) Holder for 3°30′ cones
(2) Holder for 5°57′ cones
(3) Holder for 9°15′ or 9°36′ cones
(4) Tension bracket with paraffin and double slub catcher*
(5) Blade-type slub catcher*
(6) MacColl needle-type slub catcher*

WOOD CONING FIG. 1 (C)

(1) Extra pressure weight for use below cone holder arm
(2) Standard pressure weight for use above cone holder arm
(3) Spindle holder arm
(4) $^3/_8$" bare spindle for wood twister tubes
(5) Standard spindle with Oilite bronze bushing for wood cones or wood tubes
(6) Tension bracket with single blade slub catcher* (or MacColl)
(7) Tension bracket with paraffin and single slub catcher* (either type); bracket shows double disc tension (with paraffin removed, another tension disc can be used on this post)

*The Slub Catchers are the "Precision" type; accurate and parallel settings are easy to make and keep.

SUPPLY SPINDLES

The supply holder is adjustable to accommodate various lengths of bobbins. The spindle is adjustable in the holder. A special rod can be added when vertical spindles are required.

EMPTY BOBBIN CONVEYOR

A conveyor at each side of winder reduces work for the operator and saves space. Empty bobbins removed from the supply spindles are placed on the conveyor and are carried to the end of the machine where they are accumulated in empty bobbin boxes. Bobbins of different types can be used on either side without danger of getting mixed when removed from the winder. A deflector can be added on the middle of the machine for separating two or more types of bobbins.

SUPPLY SHELVES

For production of knitting cones, the double top shelf provides space for bobbins and finished packages; a guard rail below protects the tension bracket. For wood coning, the bobbin box is placed below the spindle, and the single top shelf is used for cones.

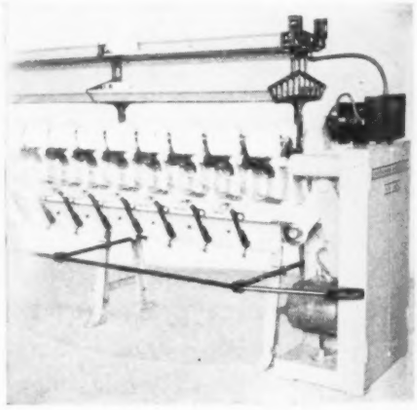


Fig. 2

Approximate winding speeds:

750 y.p.m. . . . . Wood cones
550 y.p.m. . . . . Paper cones and tubes
325 to 500 y.p.m. . . . . Dyeing packages

See our Catalog in TEXTILE YEARBOOK

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

*Reg. U. S. Pat. Off.

THE OVERSEERS' CORNER

THE EMPLOYMENT OFFICE

A PETE AND BILL DISCUSSION

Pete was headed up the ramp to the cloth room when Bill caught him by the arm.

"That section of looms over there," shouted Bill angrily pointing, "will have to stay down until we can get that Employment Office to send me some decent help. I don't believe they know a weaver when they see one. They send me the ones no one else will have. Now, if I could hire them like I used to, I could get the kind of help I need."

"Come now, Bill," said Pete with a grin. "Surely you haven't forgotten that you have had some difficulties in hiring help when you did it directly. You can't blame the Employment Office if the quality of applicants isn't as good as in pre-war days. They are picking out the best workers available. You never see the worst ones."

"They are doing a lousy job though," blustered Bill. "Why, I sent a good weaver to them to register two days ago, and those dumbells send him to Plant No. 1. Besides that, two good doffers I sent to register come by and tell me that they couldn't wait all day to get signed up and they could get a job at once at another mill."

"Bill, the Employment Office must decide where the workers are needed for the best interest of the company as a whole, not just your interest. You may be justified in some of your complaints, but I don't think there is anything basicly wrong with our Employment Department. You know our personnel man well enough to discuss your complaints with him and hear his side," explained Pete, patiently. "He will be glad to know what he should do to help you."

"You can't make a leopard change its spots," Bill concluded stubbornly.

Pete was headed up the ramp . . .

Is your employment office helping out in the present difficulties?

Letters from Readers

He'll Never Save a Dime, Says Poetess

"Lending to Employees" (Pete & Bill, September, 1942)

Editor, Overseers' Corner:

Joe Betts is in a money jam, he needs a half a "C",
And Bill says, "It's O.K. by me," but Pete can't quite agree.

Like Bill, Pete thinks that Joe's A-1; he's borrowed dough before
And always paid it back on time—but soon he's back for more!

For, reasons Pete, while Joe is sure a company loan's a cinch,
He'll never save a dime today against tomorrow's pinch.

Pete feels Joe needs more lasting help; a turn-down, not a loan,
Would force Joe to some money-sense and put him on his own.

And Pete is right, for I have seen a lot of men like Joe
Who never really learned to live until some "Pete" said, "No".

IRENE D. WILLIAMS (*Taunton, Mass.*)

Tough Spots for Bill

The Third Shift Bugaboo (Pete & Bill, October, 1942)

Editor, Overseers' Corner:

Bill is sure going to get into some tough spots if he keeps thinking the same way he did two years ago. He has got to be a whole lot quicker to grasp his new problems—third shift or anything else, and organize it better.

To my way of thinking there are too many men like Bill ready to give up and burden somebody else with his problems. He should be in there fighting and thinking how he is going to get things done with less help, new employees, and 3-shift all-out production.

Some men like Pete can do their jobs in their stride by being open-minded and trying out new methods or different combinations of old ones. Of course using experimental employees in the third shift isn't a new idea but I

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing material on these pages or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

believe Bill is a little chicken-hearted about asking his employees to do things. If he has the spunk to tell them in the right way he'll have no argument from any loyal employee. I know most people don't want to work the third shift for a good many reasons but anything that will help the country, the company, and their own personal chances of promotion, they'll do. Most folks are patriotic and loyal and willing to go all out to help. J.C.P. (*Ga.*)

Balance the Third Shift!

The Third Shift Bugaboo
(Pete & Bill, October, 1942)

Editor, Overseers' Corner:

Of course employees with good records and long service should be asked to work on the third shift! Not perhaps as a permanent assignment, but, as Pete says, until they get the third shift's production problems licked. Clearly you can't run one shift made up of novices and misfits! If you scatter in some seasoned workers through the new shift, you'll improve the spirit, the morale and the production of that shift. Maybe the old workers won't like being put on the lobster shift, but after all there're lots of things we don't like that are right on our thresholds, and while the emergency lasts, "the greatest good for the greatest number" is a sound principle that many must take to heart. P.B.T. (*N.H.*)

Home Talent Best

"Learners From The Village"
(Pete & Bill, August, 1942)

Editor, Overseers Corner:

Young people from mill communities should be encouraged to enter the mill. If you get those young people who are born and raised in the mill communities, or who have been moved to the community when very young, and teach them, you have a good worker; one, that four chances out of five, will stick and take pride in his or her job. The biggest mistake made by an overseer or superintendent is the hiring of drifters —workers that are here today and gone tomorrow. They will stay on a job just long enough to tear it up, and when it begins to run badly, they leave, looking for some other damage to do.

Here is an incident about two of our men that had been here a long time and very good mill men. These two men quit and went to another place to get a job. They asked the overseer of a department for a job. He asked them what they could do. They said they were section men. The overseer told them he couldn't use they because they trained their own section men.

That is just the attitude for the overseer and superintendent to take. If all would do that they would have the most satisfied bunch of help that could be found in any industry. With defense industries offering higher pay, wavering employees should be urged to ask themselves—"Do I know the new place or people? Do I think I will like the new work or my new boss?" Four times out of five they will stay where they have been for so long, where it seems like home to them, and where they know the people, and are known by almost everyone.

HOMER J. CABANISS (*Avondale Mills, Sylacauga, Ala.*)

Overseers' Practical Helps

Selvages Damaged by Temples

Wartime conditions require that good care be taken of loom temples as they are difficult for some mills and impossible for others to replace. The pins of temples become with the course of time blunt or broken and when weaving fabrics set closely, the reed begins to beat the fabric in such a way that it sometimes forces the fabric through the temple almost half an inch.

When the spring *a* of the temple is very soft the fabric begins to move inside the temple and causes the pins to pierce the fabric as many times as the reed beats it. The pins, especially if they are blunt, continually piercing a fine sley fabric will rupture or break some of the selvage yarns and warp yarns near the selvage.

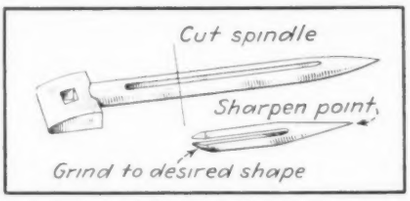
A remedy for such trouble is found by using an extra spring *b* attached to the temple and to the loom beam. The spring will tend to assist the temple in receding as the reed strikes the fabric, thus preventing the cloth from being forced through the temple.

Spring *a* returns the temple to its normal position. Thus, regardless of blunt pins the temples will follow the movement of the cloth and only one set of pin marks made in the cloth.

F. M. (*Mexico*)

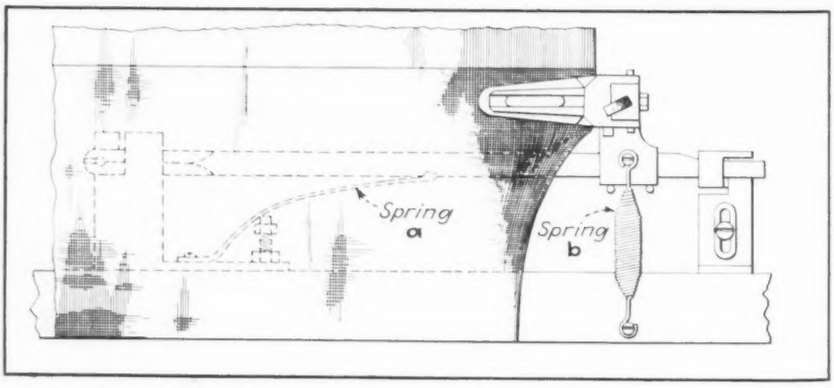
Useful Forceps Made From Old Shuttle Spindles

A satisfactory set of forceps can be made from broken or discarded quill spindles removed from shuttles. Forceps ground with special shaped jaws make various tedious jobs, such as holding small screws, stripping stop-motion wires, etc., easy tasks.



Forceps made from an old shuttle spindle.

Cut the spindle slightly longer than the desired length, as shown in the illustration, grind the forcep jaws to the desired shape, and polish with fine emery. Six forceps make a complete



Additional spring prevents damaged selvage.

kit, and when not in use, the forceps can be wrapped in oiled cloth to prevent tarnish and rust.

One forcep rather flat and wide comes in handy for removing and replacing filling yarn tension pads in cotton plate-tensioned shuttles; others are excellent for removing splinters and for other first-aid uses. If desired, one end of the spindle can be sharpened to a needle point for removing lumps and gouts from a woven cloth.—

H. E. W. (*Penna.*)

Alizarine Red Short-Cuts Indigo Dyeing on Wool

Low costs are claimed for bottoming wool for indigo blues with alizarine red paste by a short, but somewhat unorthodox method described in the September issue of *Dyelines and Bylines* published by Calco Chemical Division. American Cyanamid Co.

The wool is first well wet out. It is placed in a sufficient quantity of water for dyeing to which has been added the proper amount of alizarine red paste and sodium dichromate for producing the shade of red desired. Raise the temperature to the boiling point and boil for thirty minutes. Rinse and dye with indigo by the regular procedure.

While an appreciable amount of free color lake is formed during the dyeing, this is removed completely with loose indigo during the wet finishing. The reduction in the time cycle and the saving of steam by this method should more than offset the loss in alizarine red paste.

Employees' Manuals Wanted

TO ASSIST us in a study we are making, we shall greatly appreciate it if readers will send us a copy of any manual or other material which their company has issued for the purpose of acquainting employees — particularly new employees — with their job and with company policies relating to transfers, promotions, health and safety, and other employer-employee relations. Kindly address such material to Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York.

STA Told of Need for Scrap

Members of Piedmont Section discuss causes and repair of broken parts

STEEL MILLS ARE GOING TO STOP if the southern mills don't get their scrap in quickly was the message brought by an official spokesman of WPB's Conservation Section. Broken parts are caused by improper fitting of the part, poor fixing, and vibration, according to a textile machinery representative. Mill men can repair and reuse many broken parts if the collection, welding, finishing, and fitting of parts are done carefully. Substitute cotton fabrics to replace wool slasher cloth are being tried out. These messages and the crossfire discussions held the intense interest of the members of the Piedmont section of the Southern Textile Association meeting in Charlotte, N. C., on Oct. 3.

W. M. Parsley, in charge of the Conservation Section of WPB for North Carolina, urged all mill men to turn in more scrap to keep our steel mills going. In cotton mills, hosiery mills, and other plants there is a vast accumulation of scrap. Mills are finding that it is wise to go over their equipment and eliminate a great deal of obsolete machinery—some of it, possibly, for use as machines by other plants. All unusable parts should be sent in for scrap, to meet our country's urgent war needs. Scrap materials must go through the regular channels of the junk dealer because the average machine is composed of steel, brass, copper, and various bearing metals and the steel mills cannot use these machines in their present shape and condition. Scrap dealers must do the job of collecting, segregation and loading carload lots for quick shipment.

The Industrial Salvage Section will contact the mills and ask the management to appoint a so-called resident plant salvage manager to go through the plants and mark machines and parts not being used and which cannot be used by another plant, and have them put on the scrap pile. A monthly report should be made out by the mills, showing the quantities sold through the commercial scrap dealer channels. This report consists of a two-way post card, one to be torn off and kept by the mill, and other sent to WBB.

Most of the industrial scrap for our steel mills is made in the East and, since a junk dealer's business is outdoors, junkyards are covered with ice and snow during a large part of the winter months. Consequently the entire source of scrap for these mills is reduced as much as 60%. For this reason, the South must be called upon to keep the steel mills going.

REPAIR OF WORN PARTS — especially studs and shafting—by spraying molten metal on the worn places and grinding to shape was recommended by Marshall Dilling, superintendent, A. M. Smyres Mfg. Co. Cast-iron parts, motor bearings, and many other parts can thus be reworked.

T. C. Pegram, of Erwin Cotton Mills, explained the system of checking up on broken parts followed in his mill. Every broken part is segregated according to shifts, and an experienced loomfixer puts aside what he thinks can be saved and sends it to the shop. Parts that cannot be saved are thrown into the scrap bin. Other parts that should not be repaired or mended are tagged by the loomfixer and turned over to the overseer. The company is now salvaging parts that until recently it was generally thought could not be reclaimed. Mr. Pegram keeps right behind this program by looking at the scrap table once a day and by visiting the welding-shop a number of times each day. He is careful to find out why some broken parts cannot be fixed.

In the discussion of why parts are broken it was mentioned that the heavier constructions of Government fabrics, made on looms not designed for them, cause many broken parts. However poor fixing was considered to be another major cause.

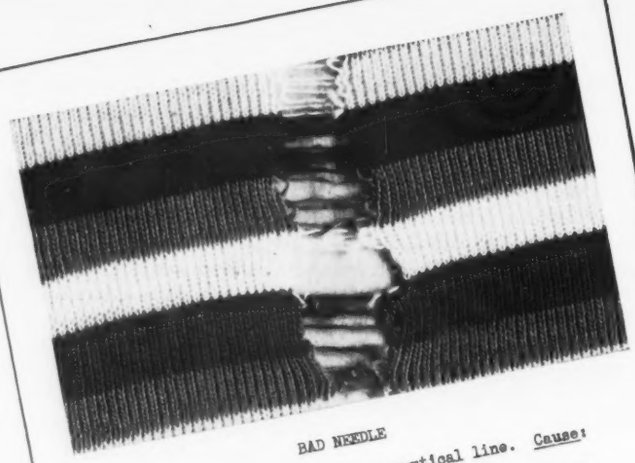
L. G. Bozeman of Whitin Machine Works, stated that excessive breakage is due frequently to two main factors, improper application of the part and machinery vibration. Gears and parts from machinery builders are interchangeable to some extent but the fixer should learn to file and fit as erectors of machinery do. Studs and shafts should be lined up so as not to throw a strain on the gears, cams, bearings, etc. Vibration causes many parts to break—particularly, roll necks, The main reason for a broken neck is because it was not imbedded properly in the stem and not fitted in the bearing, thus causing it to bind. Bad cylinders can cause a lot of wear and vibration and any other part that is out of balance will cause wear. Mr. Bozeman also explained some of his company's work on metalizing machine parts. It is not particularly good for reclaiming cast parts and has no welding action, but is satisfactory for reclaiming shafting or other round parts that can be reshaped by grinding. Non-ferrous metals are used to spray on the worn place. Non-ferrous metals can be turned if not too hard.

Cotton slasher blankets are being tested in several cotton mills according to Prof. G. H. Dunlap. A special fabric has been developed, which has proved successful for use in slashing some constructions.

Knit Goods Defects

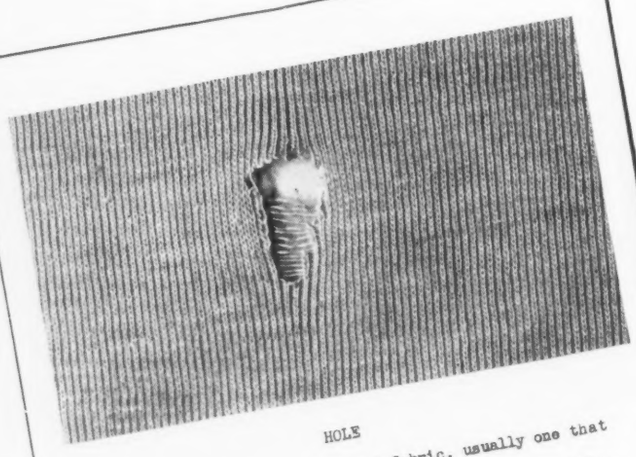
By F. J. QUILITSCH

SUPERINTENDENTS of knitting mills will find the series of defects appearing in this article useful. These photographs and their explanations, along with those run in the August issue of TEXTILE WORLD can be mounted in a loose-leaf notebook or on cards to form a permanent file.



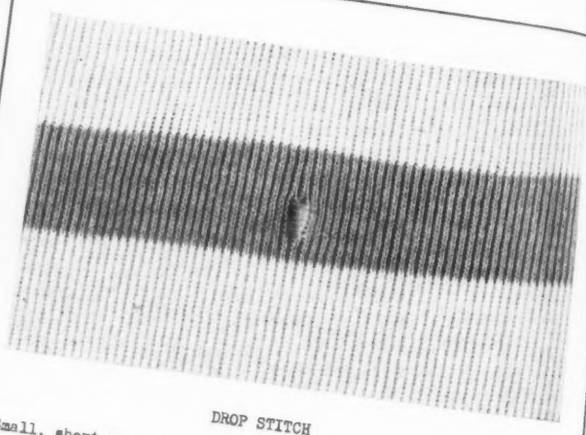
BAD NEEDLE

Holes appearing in succession in a vertical line. Cause: Latch of needle is bent and causes the yarn to be cut as it passes over the latch. Remedy: Replace needle. If the latches are bending often, check the yarn carriers because if they are set too close to the needles, they will bend the latches.



HOLE

Hole of medium size appearing in a fabric, usually one that does not run as much as a hole caused by a slub or knot because lack of tension. Cause: Carrier set too close to the needles result in the carrier cutting the yarn and causing a hole. Remedy: Move the carrier so the needles just clear it. Set the carrier so that the yarn is fed into the needles at their thinnest part, that is, just below the hook. If the hole always appears in that section knit of the same colored yarn, it is an indication that the carrier controlling that yarn should be adjusted.



DROP STITCH

Small, short run starting at a drop stitch. Cause: Certain feeds on a machine do not knit on every revolution in making automatic stripes and sometimes a needle with a shorter latch or a needle with a slightly bent latch will cast off the stitch. If the needle is fed by a feed that is thrown out of action, a drop stitch will result. Waste or dirt under one of the sections will cause the cams to push the needles up a little too far at the feed, resulting in some of the needles dropping stitches. Remedy: Replace needle or take off section and clean underneath it. When replacing, make certain that the section fits snugly.

FIXING HOSIERY MACHINES

FULL-FASHIONED MACHINES — Chapter XVIII—The Narrowing Machine

By WALTER A. SIMOND

THE NARROWING MACHINE must be carefully adjusted to obtain perfect narrowings, free from dropped stitches. It is important that the back narrowing shaft be first adjusted or gaged from the front bed of the machine. For Reading machines, use gage No. 1198, Fig. F49. Then, carefully gage the front narrowing shaft from the back narrowing shaft with gage 5303-2 or 5304-4 (use gage 15941 for machines equipped with back catchbar levers operated from top of cam). Next gage the bottom narrowing rod from the back shaft with gage 1071 and check the height with the gage shown in Fig. F50 from the top edge of the sinkers to the bottom edge of the lower narrowing rod. For this last setting, the cam rollers must be on the highest part of the narrowing cam.

Because a number of attachments are between the back narrowing shaft and the lower narrowing rod, there are several places where the 1071 gage cannot be used; therefore, to obtain a perfect alignment of the lower narrowing rod, it will be necessary to realign the lower narrowing rod from the front bed of the machine with the universal gage No. 1126. F51 at the correct 1071 position. Good results can be obtained by setting the gage so as to check with a thin ground feeler, and best results by attaching any type of an indicator reading in thousandths of an inch to the upper arm of gage No. 1126.

With straight narrowing rods, practically all fitting of the narrowing fingers (combs) is avoided; and there is no probability that the narrowing rods will ever stick in the close fitted brackets if they are properly cleaned and lubricated. Moreover, if the lower part of the narrowing machine is displaced, as by the dropping of a picot bar, it can be quickly returned to its alignment, whereas it is much more difficult to return a crooked lower bar to a working position, because some of the narrowing fingers may have to be refitted. In gaging the bottom of the narrowing points for alignment, set the gage for light contact, preferably just above the incline of the tips, for best result.

The following information is abstracted from an article in the February, 1936, issue of the *Reading Record*.

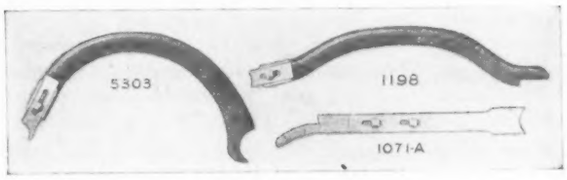


Fig. F49. Gages used for adjusting the narrowing machine.

Illustrations courtesy of Textile Machine Works

Fig. F50. Height gage.

"The back narrowing shaft has faced collars and guide arms against faced center frame bearings of the back narrowing shaft to prevent any lateral movement of this shaft. It is very important that this shaft have no lateral movement because the rest of the narrowing machine dips [except machines of the latest type, which are provided with an additional guide on the front narrowing shaft which rides in a shoe near the center of the machine; 30-section machines have two of these guide plates]. Check these collars and guide arms to be sure they are against the back center frame bearings.

"The narrowing rods should slide freely in their brackets 3 Fig. F52 with not more than 0.001 in. clearance above the rods. The bracket lid should have no more than 0.0015 in. play between the rods and the lid. This is very essential for proper narrowing operation because with badly worn brackets, the narrowing combs attached to the narrowing rods will swivel slightly when the points and needles engage, resulting in improper engagement, and consequently, narrowing menders."

"A narrowing rod will stick almost any time from dirt or 'caked' oil and will be a constant cause of narrowing menders. A 'sticky' narrowing rod can cause much trouble when the narrowing spindle is being racked back to the position for starting a new set of stockings. Under normal conditions the narrowing rod will follow the nut back, but when the rod sticks and the connecting spring is stretched until it pulls the rod loose, the tension on the spring will force the screw stop on the narrowing rod against the narrowing nut and may bend the screw stop, thus throwing the combs and narrowing points out of lateral alignment with the needles. The bent screw stop should be replaced with a new one and the narrowing rod must be reset.

"Sudden changes of temperature or direct sunlight on the narrowing machine will cause the long narrowing rods to expand or contract more than the heavier parts of the machine thereby moving the narrowing points laterally out of position. Constant temperature is very essential for good knitting, and narrowing.

"At times the settling of the floor upon which the machine is erected will cause the narrowing rods to bind in their brackets. The machine should be re-leveled to alleviate this condition."

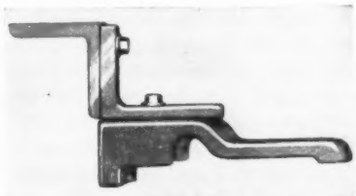


Fig. F51. (above) Gage for setting narrowing combs.

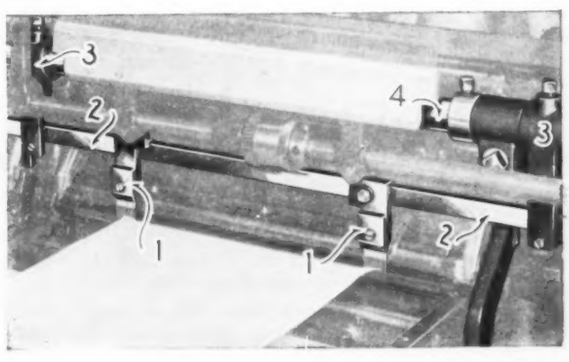


Fig. F52. (right) Narrowing rods, 2 and brackets, 3.

Rayon and Silk Section—Chapter VII (Cont.)—Filling Stop-Motion

By H. E. WENRICH

DAGGER ADJUSTMENT should be made without recourse to the cams for timing as daggers of different looms often vary in length. Fig. RS40 illustrates several positions of the cam bunter for making proper adjustments. Position A is with the dagger in the correct position for striking when there is no filling yarn under the fork and the feeler wires are down to the bottom of the well. Notice that point *X* on the bunter slopes slightly to the rear to allow the dagger to slip from the bunter after the loom starts. Position B shows the dagger too low and fails to stop the loom when the filling yarn breaks. Position C shows the dagger too high, a position which will often break the shield when starting the loom, or will stop the loom after it starts to operate. Again, it will often fail to stop the loom when the dagger strikes the cam in the position shown because the dagger may bounce downward below the strike-off notch. Position D illustrates a cam too far forward, allowing the dagger to strike in such a position that in time it will wear a slight groove inside the notch as shown in position E. Such a defective cam will cause the entire assembly to be broken if not fixed in time.

When the dagger strikes into a groove as illustrated in position E, it is often broken or bent, bending the dagger holder and the adjusting rod as well. If the feeler wires are spread under the cloth and then bent in such a shape that repair is practically impossible, or when small holes are torn in the cloth when the loom stops, it is generally an indication and likely that the cam is worn as shown. The cam should be removed at once and replaced. Sometimes an old cam can be ground out and used for later repairs.

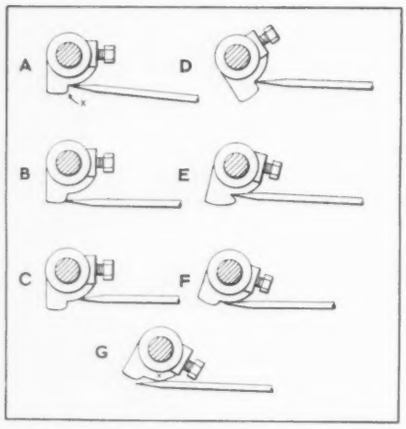


Fig. RS40. Cam bunter and dagger adjustments.

A cam in position F is set too far to the rear and likewise allows the loom to continue running when the filling yarn breaks. As in this case, the dagger might strike the nose of the cam, but with slight force so the cam moves around without sufficient force, or far enough back to knock off the braking mechanism. When a cam has been knocked off correctly, it will lie back in position G with the dagger completely out of the cam, the hump *X* helping to force the dagger point out of the notch as the cam moves around into the "off" position.

Timing the filling motion requires the removal of the lifting (pump) rod from the loom entirely. Bring the lay forward by hand so the dagger will fit in the strike-off position A, Fig. RS 41. Have the loom motor turned off and pull the shipper handle to the "on" position so the shield will be held up. See that the feeler wires are down solidily in the bottom of the well. If the feeler wires do not rest on the bottom or the dagger does not rise to position *1*, remove the connector rod screw from the hub crank and raise or lower the connector rod in the rod head to secure the adjustment desired. It may be necessary to remove the dagger lever to get at the rod head.

Replace the lifter rod and pull the lay to back center position. Proceed carefully with this operation as the rod may be too long. Place a shuttle under the feeler wires, resting it on the race plate, as illustrated in Fig. RS 42. Adjust the lifter rod up or down at the rod head so the feeler wires will be between $\frac{1}{8}$ to $\frac{1}{4}$ in. above the front top edge of the shuttle. Remove the shuttle and test once more for the dagger position, as in Fig. RS 41. Should this adjustment be satisfactory, reach into the well and pull the feeler wires up so the tip of the wires are level with the race plate, bringing the dagger into position shown by the dotted lines 2. This clearance is the running position of the dagger when the filling rests under the fork and

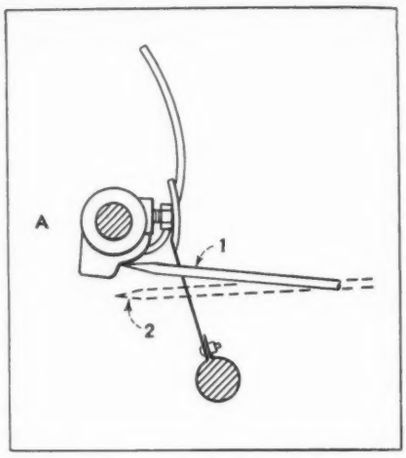


Fig. RS41. Correct position of bunter and dagger.

should be approximately $\frac{3}{16}$ in. If the lifter rod is too high and prevents the feeler wires from dropping back to the bottom of the well with the lay in the position of dagger *1*, the rod should be moved backward in the pump rod stand slot, as illustrated in Fig. RS 39, October issue.

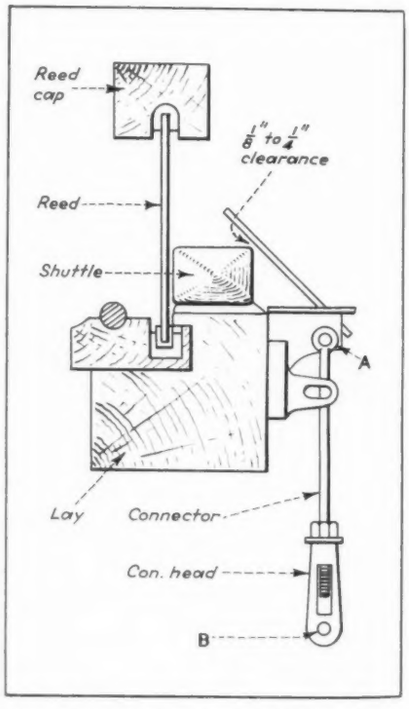


Fig. RS42. Adjustment of filling fork.

QUESTIONS & ANSWERS

Tension for Loom Creel

Technical Editor:

We are weaving directly from the creel and are having difficulty in controlling the warp threads as they come from the spools on the creel, around the beam, and through the heddle. The difficulty seems to be with the spools on the creel jumping ahead with the pulling of the warp threads around the beam and through the heddle.

Kindly advise us on the means of controlling and regulating the tension on the spools on the creel. Also, is it possible to control the tension in the warp threads by way of the beam? (8869)

It is difficult to visualize your exact set-up for controlling the warp ends back of the heddle. If by "beams" you refer to a drum and roller tension rolls, similar to those used at the back of card looms, I cannot see why tension is not even. On such looms ends are drawn through a holey-board, or frame, with inserted porcelain eyes, then over a small 2 or 3 in. guide roll, under a 6 or 8 in. sand-covered tension drum, up over another 2 or 3 in. guide roll and from there to the heddles. On the tension drum shaft outside the loom frame a grooved friction wheel is keyed and a snubbing belt, fastened to the loom frame, passes over the wheel. By adding weights to the belt any degree of tension may be secured.

Individual spools may also be tensioned by a small tension device used for warper creels, especially the type used for magazine cone creels. This may call for a considerable outlay in tension devices because of the large number of ends in a creel and for this reason may not be practical for your use.

Jerked-In Filling In Rayon Crepe

Technical Editor:

Enclosed find two swatches (one in the gray, the other dyed) showing jerked-in filling, a defect that we have been unable to eliminate to any real extent.

This condition seems to appear in only one of our numbers. The construction of this cloth is as follows:

Warp: 100-den. acetate (dull), 3 in a 45 reed, 45-in. in the reed.

Filling: 62 pickwheel, 100-den. viscose rayon crepe; either 56 turns in 40-fil. yarn, or 63 turns in 60-fil.

We are weaving this cloth on a 2/1, 52-in. C & K non-automatic loom.

All the crepe yarn for this cloth comes from the same throwster, who is also the customer. This customer also has a weaving plant using the same filling yarn and he states he is not having our trouble. The reason we stress the throwing is that we get much better results in cases where we have used other crepe yarn, of the same denier and twist. We therefore feel that the throwing has something to do with the situation.

On the other hand, this condition does not appear in every loom that is on this cloth, reappearing mostly in certain looms, making it apparent that there is not only the throwing to blame.

We shall greatly appreciate your opinion, as to the cause of this condition, and any advice you might be kind enough to give us as to its elimination. (8881)

The first question to be answered when this defect appears is: How is the crepe filling steamed? The throwing plant may not steam-set the twist sufficiently. This renders the yarn lively so that the S-twist (yellow) gets caught in the first pick of Z-twist (purple) on the box-side. Conditions due to improperly set twist can be further aggravated by too much tension in quilling or too severe a tension in the shuttles. This may be the reason that some looms are giving more trouble than others.

Another reason that the difficulty is experienced on certain looms may be improper checking of the shuttle.

Following is a summary of causes for jerked-in filling such as shown by the sample submitted:

1. Insufficient steam-setting in throwing.
2. Too much tension in quilling, making yarn lively.
3. Not enough steaming of quills.
4. Excessive shuttle tension acting the same as too much quilling.
5. Shuttles back-lashing in boxes.
6. Top shuttle riding over filling of bottom shuttle.

If correction of the above-mentioned conditions does not prevent the trouble, try the following:

1. Change twist in shuttles or reverse shuttles.
2. Install separators which keep the two twists separated at all times while both shuttles are in the boxes. Such a separator must work in coordination with the box-motion and can be controlled either from a hook on the dobby or head motion or can be connected directly to the boxes.

In conclusion we might mention one rather remote possibility. If the mill uses S- and Z-wind in quilling, it may be that some S-twist quills were quilled on Z-wind or vice versa. With the number of new employees now found in many mills, such a thing might occur.

Carding Wool on Cotton Cards

Technical Editor:

Will you please advise the best procedure to get 62s wool, 1-in., through cotton cards and drawing frames? We have trouble with it on the card when we run it 100% and at drawing where it is with 5% of cotton. (8867)

It is a difficult problem to process 100% wool on a cotton card. In the first place one is seldom able to make a satisfactory lap of straight wool. Generally, trouble is encountered in the form of split laps and thick and thin spots. To help overcome these troubles, the stock should be well opened (as running through a feard naught) before going to the picker. Care should be taken that the stock does not become neppy; however, on 62s stock cut to 1 in. length no great difficulty should be experienced. But assuming that the lap is all right, the following processes require close attention.

Atmospheric conditions in the card room must be closely controlled. Humidity at 60% or slightly better, together with a relatively high temperature, is required. But in spite of these anti-static forming conditions, it is sometimes necessary to apply a static neutralizer at the front roll of the draw frame.

At the card, production should be kept rather low and the feed light. To prevent the licker-in from loading, it would be well to slow down its speed to about 200 r.p.m. Due to the stiffness and kinkiness of the fiber, the flats should be raised a bit. The flat strip will normally run high. The cylinder and doffer will have to be stripped frequently; otherwise the web will become cloudy and neppy. If the cylinder loads too rapidly, it might be well to apply a fancy roll at the front just below the flats. This will keep the stock up on the points of the wire and the transfer to the doffer will be made much easier. It is not feasible to use these strips in a regular mix.

The conventional draw-frame should be satisfactory for this stock, since it is but 1 in. long. Setting the rolls close to staple will produce a more uniform sliver. Two drawings should be sufficient. Run the sliver on the light side, as too much bulk between the rolls will cause irregular drafting. Be conservative with all drafts.

NEWS OF THE MONTH

Thread Industry "Converts" to Yarns

A unique form of plant conversion is that taking place in the thread industry, according to statement made by Percy S. Howe, Jr., president of the American Thread Co., at the annual meeting of the Cotton Thread Institute in New York, Oct. 23. Mr. Howe, who is a member of the textile advisory committee of WPB, said that the unprecedented demand for combed yarns needed for war orders has necessitated conversion of thread spindles to yarns for war purposes to the maximum extent consistent with maintaining an adequate supply of thread for both war and essential civilian needs. He also stated that the importance of long staple cotton for military consumption has called for the limitation of its use in thread to those qualities where substitution is impracticable.

Josef Pollack, chairman of the board of the Institute, stated that the cotton thread industry has already prepared for the task of adjusting to a war economy, by liquidating a great variety of overlapping brands, and needless ticket sizes, reducing spool sizes, and conserving paper.

Mr. Pollack was reelected chairman and David Snyder was reelected executive director and secretary.

Old Silk and Nylon Hose Collection Starts

Collection of worn and discarded silk and Nylon stockings is scheduled to start Nov. 16, according to announcement by the conservation division of WPB. Under the hosiery collection plan, collection centers will be established in all retail stores having a women's and misses' hosiery department. All stockings will ultimately reach the Defense Supplies Corp., a subsidiary of RFC.

The silk thus recovered will be used primarily in the production of powder bags.

The collection is limited to hosiery; other silk or Nylon garments are not wanted. However, it has been suggested to WPB by Ernest Barber, silk consultant of Paterson, N. J., that the collection program be extended to include other silk articles. In order to get around the problem of weighted goods, he proposed that women be shown the simple test for determining weighted silks (by burning a few threads and noting whether or not a small ball of fragile ashes forms) and then the weighted material, separated from the unweighted silk, could be treated with diluted hydrofluoric acid in two baths and washed in clean water. This treatment, Mr. Barber pointed out, would remove all the weighting and make the silk suitable for use.

Urge Higher Percentage of Learners

The time is appropriate to review the situation with regard to learners, Paul B. Halstead, secretary of the Cotton-Textile Institute, stated at the Wage-and-Hour hearing held on that subject in New York, Oct. 27, before Merle D. Vincent, of the Wage and Hour Division. "The 3% regulation for the cotton industry was prescribed in October 1939," said Mr. Halstead. "There was no conception at that time of the terrific scramble that would later ensue for workers in our industry. Our payrolls have increased to the extent of over 100,000 workers since 1939. This is an astonishing accomplishment. The problem is to hold these ranks as the pressure of war needs increases."

The probability of the peak in production having been reached, Mr. Halstead pointed out, is suggested by the fact that, notwithstanding the tremendous civilian and war demand for cotton goods, machinery activity is no longer climbing upward. The check in output, he is convinced, is not due to shortage of raw material, but lies in machinery capacity and manpower.

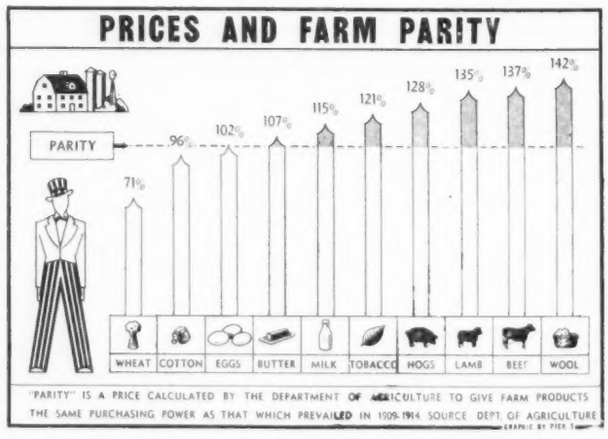
At the hearing, labor representatives for both the textile and apparel fields urged an advance from the present 25¢ per hour to 40¢ for learners in the industry.

Earle E. West, secretary of the Underwear Institute, also said that output was being held down because of lack of help. He recommended that the percentage of learners in his industry be raised to 20% over the present 5%.

Wool Growers to Push Their Demand That Government Purchase Clip

Domestic wool growers are preparing to renew their demands that the Government purchase the domestic wool clip. Senator H. H. Schwartz of Wyoming, new chairman of the Senate Committee on Transportation and Marketing of Wool, has been advised that necessary appropriations for continuing that committee would be voted. The War Production Board, through Frank Walton, Deputy Chief of the Textile Section, whose statement in this connection was quoted in these columns in September, has resisted the request of the National Wool Growers Association, that it recommend the purchase by the Government of the entire domestic wool clip.

Domestic growers pointed out that demand is 90% for military and collateral purposes, and exists only because domestic wool is specified by the Army and Navy. Uncertainty, wool growers claim, threatens continued volume of production in this country. They are operating under difficulties of high feed and labor costs. Sheep being sold for slaughter are from two and three times the normal amount at this time, growers say. However, recent reports indicate



ANIMATED CHART which shows the recent standing of an important group of agricultural commodities on the basis of their "parity" prices. Cotton is near the foot of the list and wool near the top. "Parity," calculated to assure farmers the same purchasing power today as prevailed in the base period of 1909-1914, is reached by multiplying the average commodity price for the period by a current index figure on living and operating costs with that same period as 100.

HOW THE "WAVES" LOOK IN THEIR NEW UNIFORMS: Members of Lt. Com. McAfee's staff, left to right: Lt. Jean T. Palmer, USNR, of New York, N. Y., Lt. (jg) Virginia Carlin, USNR, of Springfield, Mass., Lt. (jg) Marion Enright, USNR, of New York, N. Y., Ensign Dorothy Foster, USNR, of Atlanta.

that wool has been bringing a high price relative to other farm products, being near 140% of "parity."

It is expected that demand for Governmental control of wool will be renewed after the November elections with the arrival in Washington of Fred R. Marshall, secretary, and J. B. Wilson, chairman of the Legislative Committee of the National Wool Growers Association.

Textile Engineers to Meet

The annual meeting of the Textile Division, American Society of Mechanical Engineers will be held Wednesday, Dec. 2, at the Hotel Astor, New York. At the morning session, M. H. Irons, American Moistening Co., will present a paper, "Evaporative Cooling Primer for Textile Management." George Fischer, Infra-Red Ray Equipment Corp., will discuss "Infra-Red Drying of Textiles." At the textile luncheon, Fessenden S. Blanchard, of Textile Research Institute, will speak on the "Organization of Textile Research for War".

Salvage at Philadelphia Quartermaster Depot

Textile mills may obtain a number of helpful suggestions in the salvage of materials from Lt. Col. Walter L. Shearman, Salvage Officer, Philadelphia QM., where a saving in over $1,250,000 has been made for the first quarter of the fiscal year 1943.

Lt. Colonel Shearman established a system for spot-welding short ends of steel strap obtained from strapping taken from cases received at the Depot from private contractors. This material is used in all baling operations, thereby saving a tremendous quantity of new steel strap. By baling cloth clips salvaged from the cutting rooms of the Depot, the time required in handling these clips is reduced one-third less than the time required to box an

Unbelievable!

how WALLUSTRE hides

MAINTENANCE, with a minimum of interruption to operating schedules, is of utmost importance today. That's why the Devoe Laboratories developed Extra-Hiding High Gloss WALLUSTRE, the modern paint that **does the job in just one coat.**

Another reason why maintenance engineers specify WALLUSTRE for all interior wall surfaces is that its lasting whiteness insures proper reflection and diffusion of every bit of light available.

Eight outstanding advantages make WALLUSTRE the maintenance paint for you to specify for your plant:

1. **One-coat hides black.**
2. **Amazing initial whiteness.**
3. **Stays white longer.**
4. **Modern synthetic vehicle.**
5. **Tough — long lasting.**
6. **Brushes smoothly — easy to apply.**
7. **Ideal for spray application.**
8. **Economical — high spreading rate.**

If conditions in your plant indicate a paint with high resistance to moisture, fungi or fumes, your Devoe Maintenance Representative can help you select the specialized type you need.

Write today for pamphlet WL-28 describing the complete Devoe Wallustre Maintenance Paint Line.

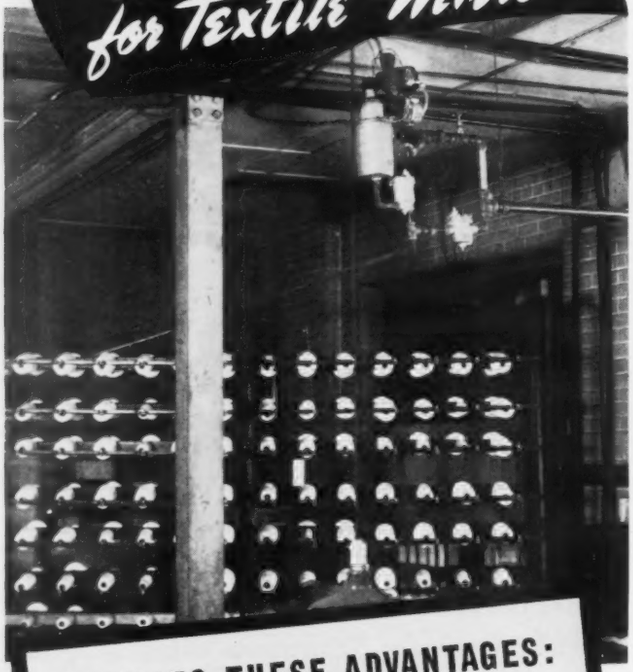
By improving sight with paint you help the National Safety Council's drive to reduce accidents and you build better morale among the workers in your own establishment.

DEVOE & RAYNOLDS CO., INC.

The 188th year of the oldest paint-maker in America

FIRST AVENUE AT 44th STREET, NEW YORK, N. Y.

ARMSTRONG
Low Cost, Efficient, Steam HUMIDIFICATION for Textile Mills



PROVIDES THESE ADVANTAGES:

1. LESS FIBRE BREAKAGE
2. HIGHER PRODUCTION SPEED
3. REDUCED WASTE
4. LESS FLY DUST
5. HEALTHIER WORKING CONDITIONS

HERE is a practical method of humidification for textile mills — large or small. The compact Armstrong Unit Humidifier utilizes low cost steam introduced automatically into the air without dripping or the formation of puddles. Control is positive, governed by a sensitive humidistat. Yet, both initial cost and operating expense are low. The complete Armstrong unit illustrated with Friez humidistat and all accessories lists for only $100.00; is capable of humidifying up to 40,000 cu. ft. and more. Investigate this modern, efficient means of ending your dry air problems. No obligation.

ARMSTRONG MACHINE WORKS

872 Maple Street • Three Rivers, Michigan

WRITE TODAY

for copy of the new bulletin "Armstrong Humidifiers in Industry"' It tells how many textile mills are using Armstrong Humidification to advantage.

ARMSTRONG

BUILT BY THE MAKERS OF ARMSTRONG STEAM TRAPS

equal amount. In addition, there is over a one-third saving in space. In baling, reclaimed cardboard and steel straps are used entirely, increasing the saving of critical materials.

Book Commemorates "E" Award

Cramerton (N. C.) Mills, Inc., have gotten out a fascinating book commemorating the presentation of the Army and Navy "E" Award to that organization and its employees. The book contains details of the ceremony itself, which was held on Sept. 18; pictures taken at the ceremony; photographs showing the use of the mill's products for war purposes; views of the industrial relations aspects of Cramerton Mills; a list of men in the Service; and a complete list of the employees.

Textile Mills Aid Scrap Drive

During the last month numerous textile mills have contributed to the drive for scrap materials. Riverside & Dan River Cotton Mills, Danville, Va., after having shipped 1.905.000 lb. of metal during the last three months has pledged a carload of junk every week until there is no more. Prestige-Tinicum Hosiery Mills, Lester, Pa., has contributed 30 tons of steel and iron made possible by scraping of four large knitting machines. Drayton Mills, Spartanburg, S. C., has contributed 60 tons of scrap metal including considerable quantities of copper and brass. Wyandotte Mfg. Co., Rochester, N. H., has contributed 10 tons of metal consisting of discarded shafting, machinery, etc. Celanese Lanese Corp., Burlington, N. C., has contributed over 20.000 lb. of metal including steel and tin.

Narrow Fabric Co., Wyomissing, Pa., has scrapped and contributed more than 2.000 idle braiding machines weighing approximately 410 tons.

The Cone group of mills at Greensboro, N. C., have turned in scrap metals totaling 1.066.201 lb. since Jan. 1.

QM to Maintain Strict Specification Requirements

Many criticisms and arguments concerning the specification requirements for textiles as enunciated by Army Procurement Agencies and in particular those put out by the Quartermaster Corps, have been made, stated Major Frank

---

A TREASURE GOES TO WAR: Treasured for many years in the Munsingwear archives for its sentimental value, this early knitting machine is being given to the War Salvage Committee by Munsingwear as one of its many contributions to the war effort. The machine, with gear-driven dials, was invented by George D. Munsing, 1858-1921, whose picture appears at left. Advanced in idea and construction, many of its features did not come into general use until 40 years later.

Wool - 3 EXTRA POUNDS IN 100

SUNOTEX OILS

Increased Yield 3%... Improved Scourability

If war demands are eating up your wool supplies faster than you can meet your orders — read this!

Recently a large manufacturer processing pure virgin wool sought to reduce costly losses in processing. Upon the advice of a Sun Textile Man — one of those Doctors of Industry — tests were made with **Sunotex RS-420** . . . and the problem was solved! Now this processor, with the same equipment, is getting better scourability, improved finish of stock, and an increase in yield of 3% — three extra pounds in every hundred processed!

Whatever your processing problem — wool or rayon — Sun's Doctors of Industry always stand ready . . . willing . . . and able to help you in your mill. Their services are yours to use for improving production . . . the products they have to offer have been developed to maintain that improved production. Prove it in your own mill . . . write —

SUN OIL COMPANY • Philadelphia

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ON PETROLEUM PRODUCTS HELPING INDUSTRY HELP AMERICA

Stainless Steel Specialists

INDUSTRIAL STEELS, INC. is a warehouse distributor of *STAINLESS STEEL* operating on a mill basis. The most complete line of stainless on the Atlantic seaboard makes it possible normally to fill requirements from our warehouse at Cambridge, Mass.

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Accessories	Plates
Angles	Rods
Bars	Shafting
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Nuts	Valves
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Pipe	Wire

★

Textile mills and machine builders have used Industrial Steels' products for the solution of their corrosion problems. When it is permissible we can supply you today or make recommendations for consideration in the future.

See our ad in Textile World Yearbook

★

INDUSTRIAL STEELS, INC.

"Pioneers in Stainless"

246-250 BENT STREET
CAMBRIDGE, MASS.

To assist users of Corrosion Resisting Steels in identifying the various government specifications, we have a "Stock List and Complete Catalog." This catalog is also available for planning your after-the-war requirements.

A FASHION SHOW presenting modern adaptations of styles in vogue during eight dramatic periods of American history following the signing of the Declaration of Independence was staged by Louise Huston, director of the Educational Service Bureau, American Bemberg Corp., at the Traphagen School of Fashion, New York, Oct. 9. Above is the Civil War original and the adaptation. The other seven critical periods were 1776, 1812, 1846, 1870, 1898-99 and 1914-18. Fabrics of Bemberg rayon featured include twills, satins, brocades and novelty blends from Catoir, Arnold Fabrics, Herbert Meyer, and Doucet.

M. Steadman, Q.M.C., before the Oct. 9 meeting of the Philadelphia Section of American Association of Textile Chemists & Colorists.

The QM refuses to reduce its standards. This is particularly true for the higher quality fabrics required by the Army. On the other hand, substitutions have been made of carded yarns for combed yarns for undershirts. Use of 80 square print cloth has been permitted in lieu of the combed broadcloth. Use of carded yarns in herringbone twills and in olive drab shades of uniform twills has been increased in items where normally combed yarn twills would have been specified.

The use of vat dyestuffs has been foregone for items of linings, comforter coverings, and cotton hosiery.

The QM has been extremely reluctant to accept less than the best quality which could be obtained in those high-count, fine-yarn cotton fabrics procured for special purposes, such as poplin for field jackets, balloon cloth used for sleeping bags, for tents for ski troops, and other items for special uses.

Scholarships at Philadelphia Textile Institute

Philadelphia Textile Institute has awarded three scholarships to South Americans, covering tuition at the Institute. The holders of the new scholarships are Gaspar Melkonian, of Santiago, Chile, whose traveling and living expenses are provided by the Chilean Government; Fernando Rodriguez, of La Paz, Bolivia, also sent by his Government; and Melquiades M. Perea, of Arequipa, Peru, who comes to Phila-

Tents Stand Up in Combat, Field Armies Report

On the desert . . . in the tropics . . .

In sand storms . . . in driving rain . . .

Tents made for the Army by the Textile Industry are "standing up well in actual combat."

So say the men of the Quartermaster Corps who are serving at the front.

Government demand for cotton duck is practically unlimited. Recent bid invitations call for materials for tents, leggings, hammocks, stretchers, gun covers, life rafts, gas mask covers.

In the bleaching, dyeing and finishing of the finest cotton duck Butterworth Machines have an important role to play.

On the application of water repellents alone, Butterworth Jiggs, Padders, and Compartment Machines have a full-time job to do.

Because of the tremendous strain placed on mechanical equipment by today's unprecedented demand, mill superintendents are on the alert to detect the first sign of let-down in quality or quantity of production.

The Butterworth Organization is at your service to help you to improve, repair or replace obsolete equipment to the best of our ability.

Let our experience serve you now.

H. W. BUTTERWORTH & SONS CO.
Phila., Pa. Serving the Textile Industry since 1820
Offices in Providence, R. I. and Charlotte, N.C.
In Canada: W. J. Westaway Co., Hamilton, Ont.

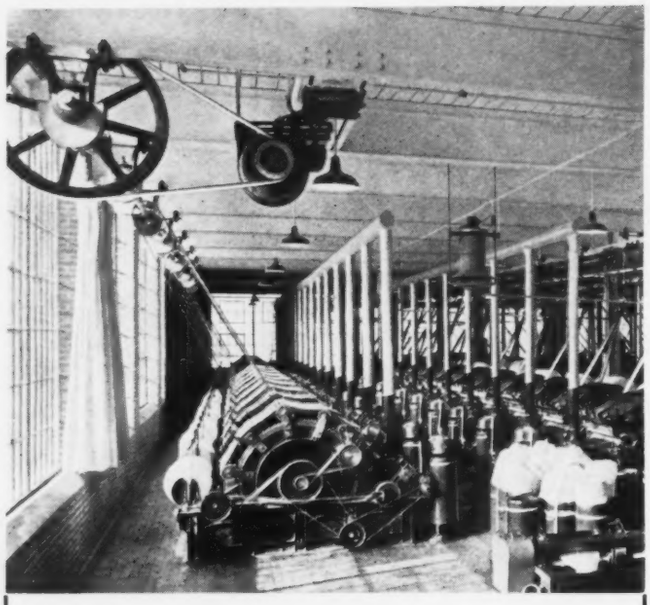
***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Proved by Research

Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY



TANNATE BELTED DRIVES HELP YOU

DO MORE

WITH THE MACHINES YOU HAVE

Equip machines with TANNATE belts . . . keep production moving at maximum speed and with minimum interruption for repairs or for maintenance!

TANNATE outlasts ordinary belts! . . . it is stronger than most first-quality oak belting; and, even when exposed to high temperatures, humidity, machine oils and many weak chemicals, TANNATE retains its strength.

TANNATE carries full load—grips tightly, runs smoothly, keeps machines producing at full capacity. It has plenty of endurance for 3-shifts, 7 days a week, too, with little attention other than an occasional application of Rhoads Belt Preserver.

TRY TANNATE!—you'll see why it is wise to BELT YOUR DRIVES WITH LEATHER!

STEP UP PRODUCTION with

RHOADS *Tannate* WATERSHED LEATHER BELTING

J. E. RHOADS & SONS • 35 North Sixth St., Philadelphia, Pa.

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ESTABLISHED 1702

TEXTILE CALENDAR

National Chemical Exposition, Sherman Hotel, Chicago, Ill., Nov. 24 to 29, 1942.

National Exposition of Power & Mechanical Engineering, Grand Central Palace, New York, Nov. 30 to Dec. 5, 1942.

National Cotton Council, annual meeting, Memphis, Tenn., Jan. 16 to 25, 1942.

delphia after two years of study at the University of Leeds, England. Philadelphia Textile Institute has offered two scholarships to the American Association of Home Economists. Scholarships have also been contributed by the following firms: two each by J. P. Stevens & Co., Celanese Corp. of America, American Viscose Corp., and Pacific Mills; one each by Forstmann Woolen Co., S. Stroock & Co. and Archibald Holmes & Sons.

Wool and the War

An appraisal of the supply outlook for wool and wool textiles is contained in a research report entitled "Wool and the War," by Hiram S. Davis, of the Industrial Research Department, Wharton School of Finance and Commerce, University of Pennsylvania, Philadelphia.

Copies of the report may be secured from the Industrial Research Department at 50¢ each.

To Stimulate Home Sewing

A campaign designed to stimulate home sewing with cotton, started in November, appears on its way to out-distance the six previous, and highly productive, "Cotton Freshness" promotions of the National Cotton Council and Cotton-Textile Institute. It is believed that American homemakers will get the urge to sew with cotton as a result of the advertisements carried in farm magazines, combined with other merchandising activities.

Committee D-13 Fall Meeting

Committee D-13 of the American Society for Testing Materials held its fall meeting, Oct. 14 and 15 at the Hotel Pennsylvania, New York. Among the principal subjects discussed at sub-committee sessions were proposed changes in methods of testing tire cords; revision of tests for rayon yarns and fabrics; and tests for durability of fabrics for military and other outdoor uses.

Red Longies and Drawstring-Top Drawers

A new hope has been offered those who are already shivering in anticipation of lack of heat this winter. However, it is not in the form of larger fuel oil rationing, but in the form, if any, of heavy long underwear. Roy A. Cheney, president of the Underwear Institute, has stated that there will be enough such garments to offset the lower temperatures in homes and offices. However, they will be coarse, heavy cotton garments, he explained, and there will be less variety since the mills have been reducing the number of styles and designs.

"And you might tell the girls they're going back to drawstring-top drawers, whether they like it or not," Mr. Cheney told a reporter, "because the Government is taking all the rubber we used for elastic tops. If they don't know what drawstring-top drawers are, have them ask an old aunt or a grandmother. We are going back to pioneer economy in everything."

In Chicago two comely young models posed for a news-

Blocking

THE INVISIBLE SABOTEUR!

ERRORS that could be prevented . . . operations that could be speeded up . . . methods that could be improved . . . all of these and others accomplish the ends of the saboteur even if they are unintentional.

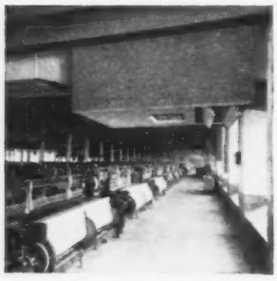
Frequently engineers and executives are amazed by the timesaving applications that can be made with modern scales. For modern scales are *much more* than better weighing instruments. They count small parts. They weigh materials and commodities in motion. They read and keep books, making PRINTED RECORDS, much faster and with *unfailing accuracy* impossible for human eyes and hands.

Use your priority to get Fairbanks weighing equipment that will block the invisible saboteur in your plant, *now* — and make money for you in years to come. Fairbanks scale engineers are ready to help you. Fairbanks, Morse & Co., 600 S. Michigan Avenue Chicago, Illinois.

FAIRBANKS-MORSE FAIRBANKS SCALES

SCALES
DIESELS
MOTORS
PUMPS

VITAL HELP
for old Spinning Rooms and Weave Rooms
with the help of
Certified Climate

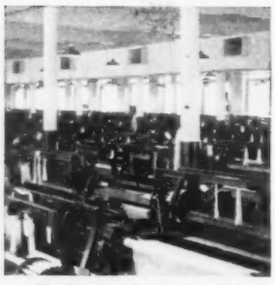


Air enters through mixing chamber

Regain higher and more dependable. Greater strength and more uniformity in numbers.

Propelled through ducts, graduated

Drafting of Fibers smoother and more compact. Waste and fly reduced to a remarkable degree.



Uniformity of many outlets

Fewer Ends Down. Not as many stops or piecings. Not as many adjustments. Cleaner and very much more comfortable rooms.

Automatic shutters let heat out

Better Product from shorter, less expensive staple. And very often 2% to 3% more production.

Certified **CLIMATE** with its exclusive method of control has been known to PAY FOR ITSELF in a year, or less.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

PERHAPS A STOCKING FASHION MILESTONE—Gotham Hosiery Co. is sponsoring a new leg look: Opaque stockings replacing sheer. Long before the industry felt the pinch of making women realize that rayon stockings must be heavier if they are to wear well, the American designer, Valentina, had told fashion reporters that she felt naked-looking legs looked wrong with war-time clothes, particularly with short evening dresses. Gotham's new Futuray Opaque stockings of 100 denier rayon are evidence of the furtherance of that vogue as shown at right. They come in black, navy blue, brown, taupe and half-brown, and look like ingrain silk of the heavier weights thus bearing out the tradition of 20-year cycles in fashion.

paper picture clothed not in scanties or bathing suits, but in long red knitted underwear.

Army Names Synthetic Textile Experts

The Army has appointed a committee to serve as a clearing house between the Quartermaster Corps and the synthetic fiber industry on technical matters. The committee, operating under the supervision of the Quartermaster General, includes: Prof. E. R. Schwartz, M. I. T.; Lewis Hird, Samuel Hird & Sons; William Klopman, Burlington Mills; Dr. Harold DeWitt Smith, A. M. Tenney Associates; Col. Max O. Wainer, president, the Quartermaster Board; Lt. William H. McLean and Richard R. Walton (Secretary of the Committee), both of the Research and Development Branch, Office of Quartermaster General.

Yes, Music Does Increase Production

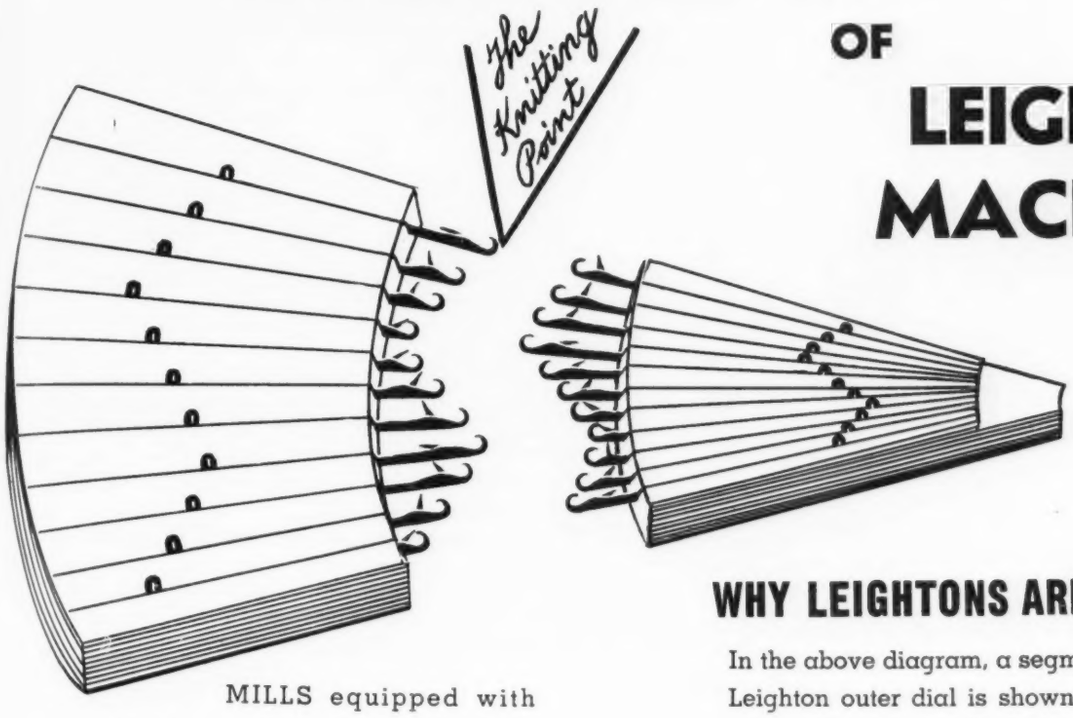
To answer the question whether music in the factory influences the production rate, Prof. Harold Burris-Meyer, and Richmond L. Cardiwell, both of Stevens Institute of Technology, invaded a number of factories and war plants in the East to measure the result. The data, as presented by Prof. Burris-Meyer before the Metropolitan Section of the American Society of Mechanical Engineers, showed that in 75% of the investigations production was considerably higher where music was used than where it was not used. Increases in production rates, resulting from introduction of music, ranged from 1.3% to 11.1%.

Celanese Produces 1/8th Denier Filament

"American chemical genius has handed another body-blow to a well-known Japanese citizen—Bombyx Mori (alias silkworm)—who has been doing business for thousands of years."

The above words open a recent release from Celanese Corp. of America in which is announced development by that company of a synthetic textile filament so fine that whereas the finest silk filament weighs approximately 1 denier this new filament weighs 1/8 of 1 denier.

WAR PROVES *VERSATILITY* OF LEIGHTON MACHINES



MILLS equipped with Leighton Knitting Machines have found it possible and profitable to switch to

NAVY WATCH CAPS

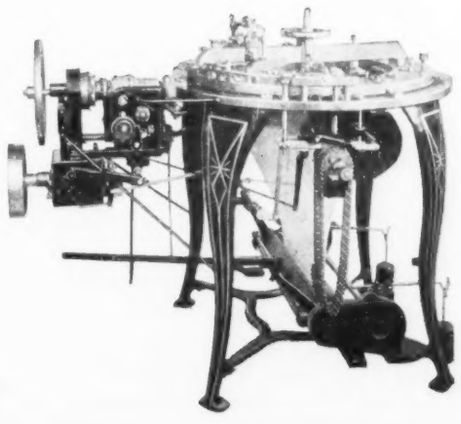
NAVY TRANSFER SWEATERS

ARMY HALF-CARDIGAN SWEATERS

ARMY AIR CORPS TRANSFER SWEATERS

and other Service garments

Leighton rib machine for outerwear



VERSATILITY KEEPS 'EM RUNNING IN ALL SEASONS

WHY LEIGHTONS ARE VERSATILE

In the above diagram, a segment of the famous Leighton outer dial is shown at the left, while a segment of an ordinary inner dial is shown at the right for comparison. Note how much more space there is between the butts of the needles on the outer dial. This means it is possible for the cams to draw one needle at a time, instead of two, and so complete one stitch before another one is started. The cams naturally have easier bevels and there is very little strain on the yarn.

Furthermore, note that as the needles pull away from the yarn feed, they diverge, rather than converge, giving the yarn more room, rather than less room, and permitting the use of coarse-yarns on the same needle cut.

Versatile machines are seldom idle.

69 Years' Experience

LEIGHTON MACHINE COMPANY

MANCHESTER, NEW HAMPSHIRE

Est. 1873 Inc. 1894

LONG RANGE PLAN
for Better Operation!

An AMCO SURVEY shows how to get more output per machine!

Whether you are working on war orders or planning how to meet tough post-war competition . . . an Amco Humidification Survey of your mill can help you do it better.

For, *correct* humidity means elimination of static, dust and fly . . . reduced breakage and imperfect goods . . . maximum production from every machine. And that is what you can expect from an Amco installation.

Without obligation, Amco Engineers determine your humidity requirements and submit a complete report including plans for an Amco System that keeps humidity "on the button".

Get It Now!

Even if priorities prevent immediate installation of new equipment, let Amco Engineers make your survey *right now*. Then, you'll have a tailor-made plan on hand to help capture post-war business . . . plus a delivery preference on a modern Amco System! American Moistening Company, Providence, R. I. . . Atlanta . . Boston . . Charlotte.

Amco
HUMIDIFICATION

This and That

Aralac, the synthetic fiber produced from casein by Aralac, Inc., is being employed in an ever-widening range of fabrics. Among the latest developments are a shaggy knitted coating with Aralac face and cotton back produced by Reliable Knitting Works, Milwaukee, Wis.; blankets containing 20% Aralac and 80% wool manufactured by American Woolen Co.; tweed coating containing 30% Aralac and 70% wool made by Collins & Aikman; uniform fabrics for women drivers employed by Supplee-Wills-Jones Milk Co.; and in a variety of fabrics consisting of Aralac and rayon staple blends being featured by one of the large New York dry goods stores.

Federal Trade Commission has named American Viscose Corp. in a complaint charging misrepresentation and specifying alleged phases of the "Crown Tested" plan. It is believed that the recent revision of the plan has not been taken into account by FTC. However some of the allegations are very broad and would apply to numerous generally accepted merchandising plans.

The possibility of obtaining standardization of colors through the use of the photoelectric spectrophotometer is being studied by the Materials Laboratory of the U. S. Army Air Forces, at Wright Field. Use of the instrument is said to make it possible to distinguish between 2,000,000 different shades of color.

OPA is seeking a number of fabric technicians to work on development of consumer fabrics. It is reported that OPA is willing to pay salaries of $4,600 a year for men qualified for the position.

American Viscose Corp.'s Roanoke, Va., plant last month observed the 25th anniversary of its getting into production. This was the second rayon plant to be built in this country, coming into operation about 6 years after the Viscose Corp.'s plant at Marcus Hook, Pa.

New York Cotton Exchange for the first time in its 71 years of existence has begun hiring girl pages.

Smithsonian Institution in its Division of Crafts & Industries has a new display of the manufacture of viscose, acetate and cuprammonium rayon, prepared by the cooperation of American Viscose Corp. and American Bemberg Corp.

Textile Fabrics Association, New York, will mark its 30th anniversary at its annual meeting on Dec. 11.

Botany Perennials—Pola Stout Designs has moved its office to 1450 Broadway, New York, where it is located on the 15th floor with the Women's Wear Division of Botany Worsted Mills.

Pacific Mills have unveiled an "Honor Roll Plaque" in its Church St., New York, office, listing the names of all of those from that office who have joined the armed forces.

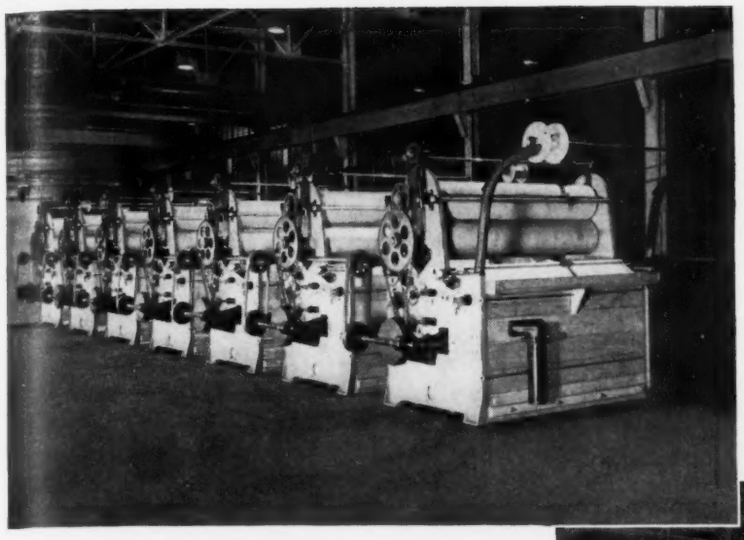
Goodall Co. is including in its Palm Beach lines for 1943 larger proportions of mohair. For example, the "Sunfrost" suit will contain 46% mohair and 54% rayon compared with a 14-86 blend last year.

Labor interests in Washington are urging freer adoption of a wool-blending program to supply fabrics in sufficient quantities for consumer comfort and to afford job opportunities for those skilled in wool manufacture who might otherwise be laid off.

Plant protection at the Ohio plants of Industrial Rayon Corp. in Cleveland and Painesville has been placed under supervision of the Army Air Force. Fingerprinting of employees is provided for.

Green Mountain Textile Overseer's Association met Oct. 17 in Hotel Berwick, Rutland, Vt. Raymond Bourey, president, was reelected.

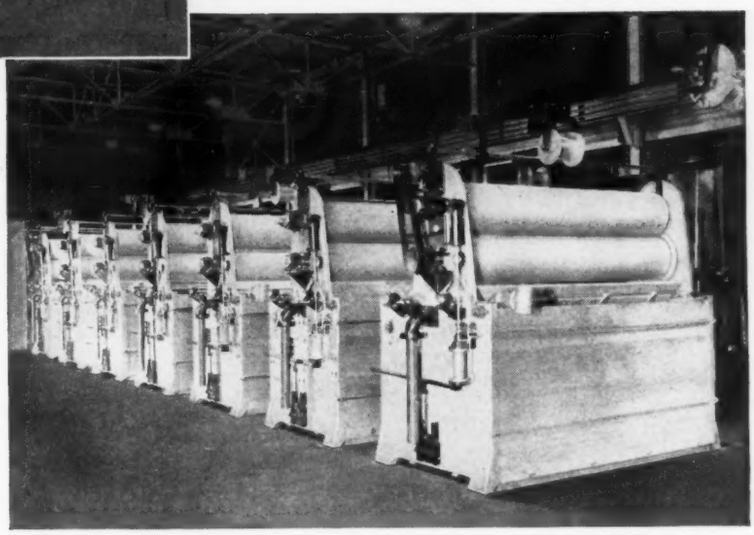
Harold Tharp, director of safety for Willys-Overland Motors, Toledo, Ohio, has designed a safety costume for



FEED END

This is the CONTINUOUS WASHER FOR HIGH SPEED RANGE OPERATION

DELIVERY END



. . . Affords Scouring Speeds up to 45 Yards per Minute on Wide Range of Fabrics

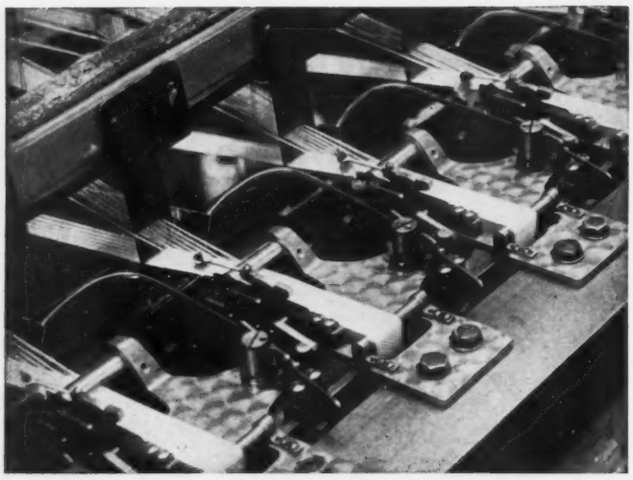
THE new Hunter Continuous Cloth Scouring Unit as illustrated above, differs from all other known continuous washers. It may be operated either as a continuous range or as seven individual Cloth Washers which may be used all at one time with seven or more different loads, or as few or as many bowls as may be required.

For complete details covering cost and savings, you are cordially invited to write to

JAMES HUNTER MACHINE COMPANY

FOUNDED 1847 • NORTH ADAMS, MASSACHUSETTS

Western Representative: **E. G. PAULES, 343 Bendix Bldg., Los Angeles, Calif.**



CLUTSOM HIGHSPEED WEAVING MACHINES

The Clutsom highspeed shuttleless loom gives high production in a wide range of narrow textile fabrics.

Rigid or elastic webbing, tapes, zipper tapes, venetian blind tapes, rug bindings, ribbons and hospital webs are some of the various items in regular production.

Wages have risen—operators are costly—no material should be wasted that can be saved. The Clutsom machine gives greatly increased production for the same amount of wages paid—cuts material waste to the minimum—no skilled labor required.

A demonstration machine can be seen at this address.

It is possible at present to give limited delivery of machines immediately.

CLUTSOM MACHINES INC.

205 EAST 42 STREET NEW YORK

Telephone MUrray Hill 4-2327

FACTORY: Springdale, Connecticut

women in industry, who states that its use in his company's assembly line has almost eliminated mishaps and greatly increased efficiency of women workers.

Wholesale Dry Goods Institute, Inc., will hold its 16th annual convention and merchandise exposition on Jan. 20 and 21, 1943, at Hotel New Yorker, New York.

Yonkers Association of Knit Glove Manufacturers has been incorporated. Sheldon L. Pollock, Yonkers, N. Y., is attorney for the organization.

Textiles Moderately Active

Cotton goods were moderately active in October. Sheetings, chiefly in bag trade constructions, were sold for as far forward as June, 1943. Print cloths and coarse yarn goods were slow, and fine goods generally quiet. Scattered activity on priorities was current in various gray goods. Raw cotton continues with minor fluctuations. Ginnings to Oct. 1 were 5,009,000 bales and the crop estimate at that time was for 13,818,000 bales, which is one to three million bales larger than any crop of the last three years.

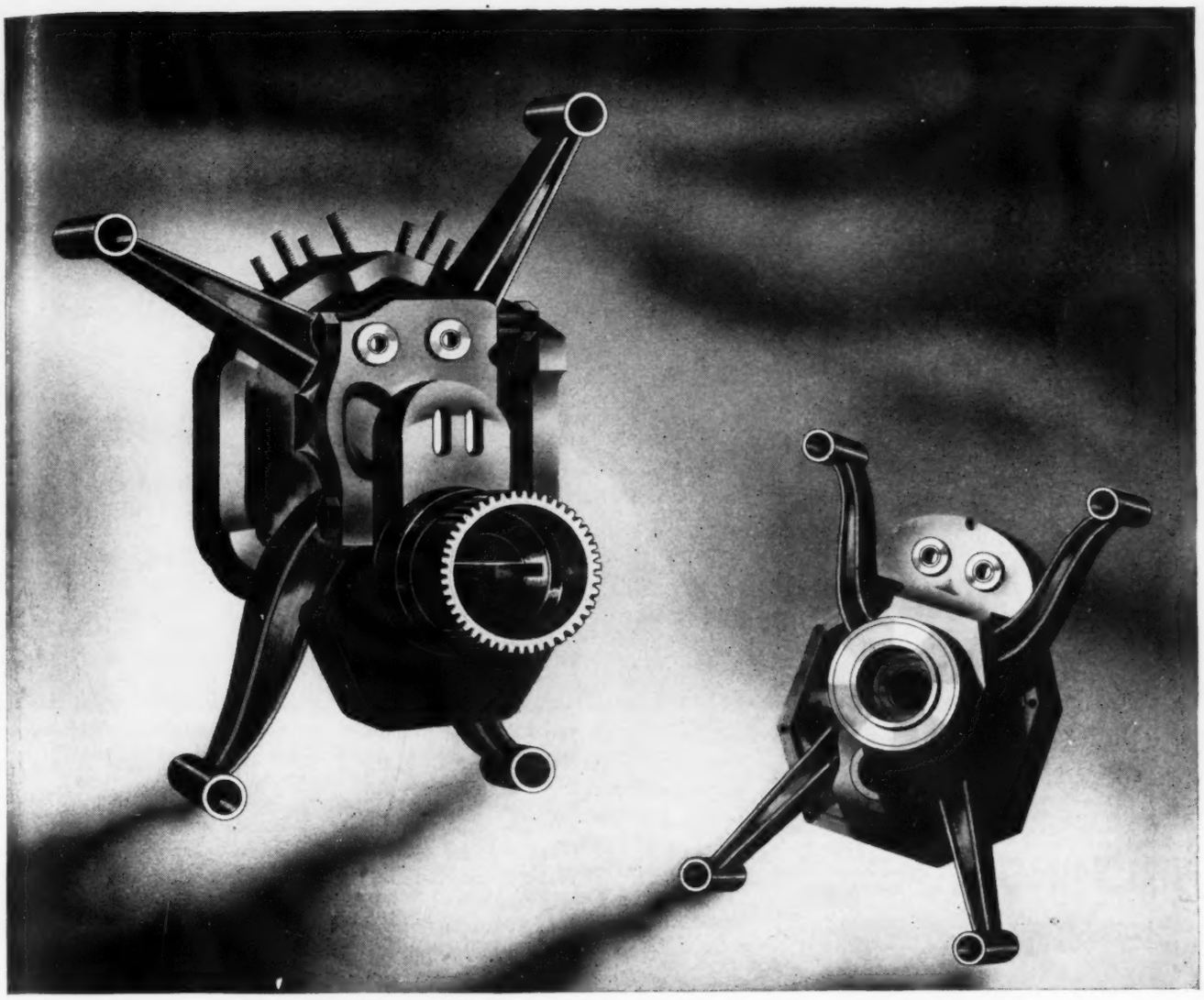
Wool goods have met fair demand, but only a limited business is being done because of scarcities and limitations. There is some investment buying of men's wear worsteds as they are considered likely to be the first item of real scarcity at retail. Supplies in hands of consumers and retailers are such that no pinch is likely before next fall. When volume buying by the Government appears again it is thought likely that a shift will be made to 50% domestic and 50% foreign after the recent confinement of interest to 100% domestic.

Rayon users now have specific figures on the poundage of high tenacity viscose rayon the leading firms are being converted to supply to the Government next year. It will displace a somewhat less poundage of regular rayon from the civilian trade and is bound to result in further scarcities. Cutters and retailers have scant stocks of rayon fabrics, and, as scarcities develop, they will be rather quickly reflected in the experience of the consumer.

Hosiery industry was startled by OPA's action in setting maximum prices on Nylon hosiery on basis of $1.65 retail price for the Nylon-leg stocking of 48 gauge or lower. The retail figures are sharp cuts from what has lately been charged, as the grade mentioned above has been bringing $2.50 in some quarters. It is generally supposed that secondary distributors have been holding large supplies of Nylons, and that this action will result in considerable unloading. The holiday trade will not give them expected margins. Mills are believed to be pretty well sold out of Nylons. NAHM places mill stocks at end of October at 162,000 doz. prs., against monthly shipments of such hosiery in 1941 which averaged 704,000 doz. prs. The market expects that a dollars-and-cents list, similar to the Nylon maxima, will soon be issued on rayon hosiery. Already buyers are offering premiums for delivery of the fine deniers.

Underwear mills are continuing high pressure operations on military goods, and production available for civilian use is readily disposed of when offered. Buyers have shown interest in 1943 deliveries as far as mills want to sell. In women's underwear there is a trend toward staples in constructions and toward limited color assortments.

Outerwear manufacturers are planning a promotion campaign in connection with next spring's National Swim-for-Health Week. Knitters recognize the difficulty of guaranteeing colors because of introduction of different dyestuffs and different materials, and they are adding to the bathing suit "no-return" tag no guarantee of color fastness. In sweater lines staples hold strongest. There has been a special wool allocation by WPB of 6,000,000 lb. to knitters in view of the expected civilian need for sweaters to keep them warm.



why TUESDAY couldn't marry THURSDAY

It happened in an airplane factory.

When brought together on the assembly line, some close-tolerance motor parts did not fit. Yet each part had been made correctly.

One part had been made on Tuesday—accurately. The other part had been made on Thursday—also accurately.

But Thursday was a warmer day than Tuesday. Uncontrolled expansion, due to the difference in temperature, upset the microscopically close tolerances of the two parts . . . thus preventing an accurate fit.

To eliminate the resulting waste and delay . . . air conditioning was installed to keep temperatures *under control.* It had to be extremely efficient air conditioning—with more *exact* temperature and humidity. *Precision* air conditioning—the kind General Electric is installing in many war production plants.

Today, air conditioning is making enormous, revolutionary advances in meeting stringent wartime requirements. After the war, the lessons learned in making fighting equipment will be applied to bring many new and interesting benefits to the general public.

More people will enjoy air conditioning . . . in homes . . . in cars . . . and in ever-increasing numbers of stores, offices and factories. It will be vastly improved air conditioning . . . in many ways. Temperature *and humidity* will be maintained more exactly than ever before. Equipment will be compact . . . flexible . . . economical.

Today, hundreds of wartime industrial users are turning to General Electric for reliable equipment. In the future, G-E air conditioning will fill the needs of all kinds of users.

Air Conditioning and Commercial Refrigeration Department, Division 423, General Electric Co., Bloomfield, N. J.

Air Conditioning by

GENERAL ELECTRIC

TOPS
in
TEXTILE
STARCHES

WARP SIZING:

NALEX—for fine cotton yarns
LANAMYL—for worsted yarns
FIBERJEL "V"—for filament viscose yarns
FIBERJEL "SR"—for spun rayon yarns

FINISHING:

FIBERTEX—for sheer, crisp finishes
NAPO GUM—for full, weighty finishes
SPUNJEL—for spun rayon finishes

PRINTING:

AMYLO—for cotton printing (replaces Natural Gums)
VAT GUM #11—for rayon and cotton printing
AMBER GUM (prepared)—for rayons and cottons

All made from domestic raw materials, and available in large quantities.

NATIONAL STARCH PRODUCTS Inc.

820 GREENWICH STREET, NEW YORK

Cotton Slasher Blanket

Four southern cotton mills experiment with newly developed fabric

DEVELOPMENT OF A COTTON SLASHER BLANKET as the result of several months experimentation in which four southern cotton mills cooperated with the Southern Textile Association, the Arkwrights, and the Textile Foundation, is announced by Prof. G. H. Dunlap. The fabric is a 60-in., 72 x 19, 0.61 yd. per lb. material made with 30s warp and 1.5s filling (produced on a speeder). Low initial cost and long life are the main advantages cited for the cotton blanket.

It is recognized that the cotton blanket may not be suitable for slashing all types of yarns, but on certain constructions which have been tested has proved successful. The types and counts of yarn slashed in the tests were 36/2 for Army twills and Army poplin, 29.65s for shade cloth, and 30s for gauze.

The chief objections to the use of a blanket made from cotton have been its lack of resilience and the hardening of the cotton blanket on the rolls. This hardening of the cotton blanket has a tendency to flatten the yarn, and does not allow the proper penetration of the size solution into the yarn during slashing.

The principal reasons given for slashing cotton warp yarns are: (1) to improve the weaving qualities of the yarn, (2) to give added weight to the finished fabric, and (3) to impart a given finish to the woven cloth. The squeeze rolls on a slasher, weighing several hundred pounds, have to be wrapped with a fabric that possesses a cushion; and wool, because of its resiliency, has served the purpose for many years, despite the many attempts to substitute other fiberous materials.

In developing the cotton blanket material used in these tests, consideration was given to past criticism of the cotton materials.

It is not asserted by any of the cooperating mills that the cotton slasher blanket possesses the cushioning properties of wool. It is admitted that the cotton blanket will harden on the squeeze rolls with use. However, this condition can be easily remedied by frequent washings of the blankets in water. The cooperating mills state also that the blankets should be removed from the rolls and left in water when the practice of stopping the slasher over the week-end is followed.

In only one of the four cooperating mills has the life of the cotton blanket been determined. Test data for this mill show that the cotton blanket ran for a period of 1608 hr. The other mills are still running the test and as yet have encountered no difficulty. The cost of the cotton material is estimated to be about one-fifth the initial cost of wool.

Attention is called to the fact that in each of the cooperating mills where the yarns were slashed with the squeeze rolls covered with the wool, and with the cotton blankets, samples of the sized and unsized yarns collected for test purposes were taken from the same set of warper beams. In each mill the same slasher was employed for testing both the cotton and wool squeeze roll coverings.

All physical testing was done by Professor Dunlap in the laboratories of the Cotton Branch of the Agricultural Marketing Administration, U. S. Department of Agriculture, located at Clemson (S.C.) Textile School.

The cotton slasher blanket was developed and manufactured by the Joanna Textile Mills Co., Goldville, S. C. This cotton manufacturer cooperated in the test by supplying a sufficient quantity of the material for testing purposes in all the mills which carried out the experiments.

FEATURES OF DODGE V-BELT DRIVES

1. Matched quality sheaves and V-belts give team performance.
2. Sheaves made of close grained iron insure smooth grooves.
3. Accurately machined grooves provide proper belt seating.
4. "D-V" Belts have concave side walls which prevent bulging over sheaves.
5. D-V belts are cured under tensions require no adjustment.

EVERY wheel and shaft has a vital and unending responsibility — put *all* your power in the job turning them for Victory.

Dodge V-belt drives are delivering full power to millions of wheels and shafts, turning on round-the-clock schedules in the Victory production drive. More horsepower becomes battle power with Dodge efficiency and ruggedness providing safe, continuous passage for power.

Dodge V-belt drives are complete, modern power transmitting units. Sheaves and V-belts are of matched quality, assuring proper belt seating, saving wear and power — extending the life of drives and hard pressed motors. Sheaves are carefully machined—groove dimensions are uniform, each matching V-belt carries its share of the load. They maintain constant speed ratios at all speeds. No lubrication is required, eliminating any danger of oil damage to products.

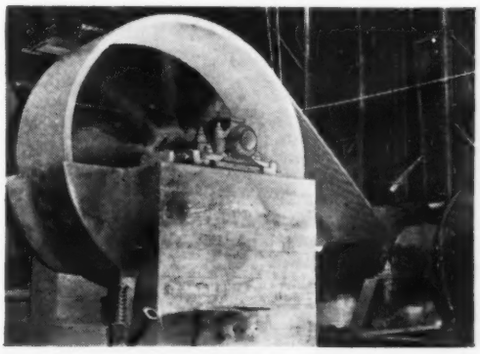
Put *all* your power in the job with Dodge V-belt drives on modern group drives and individual machines.

Dodge Distributors specializing in "The Right Drive for Every Job" provide industry with a source of supply from local stocks, including alternate selections. They offer their services in checking performance — assisting in modernization and extending equipment life. You can depend on them for valuable assistance in putting all your power in the job.

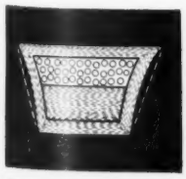
DODGE MANUFACTURING CORPORATION, *Mishawaka, Indiana, U.S.A.*

How to Make V-Belts Last Longer

Driving sheave and driven sheave should be in exact alignment. This saves wear — prevents power waste . . . Slack off tension when mounting belts on sheave. Don't force them . . . It is wasteful to put new belts on excessively worn sheaves. Roughness shortens life of belts . . . If it is necessary to replace one or more belts on a drive, replace them all . . . Mount belts evenly so that belt tension is uniform . . . Don't overload — Dodge engineering and Dodge equipment assures "The Right Drive for Every Job."

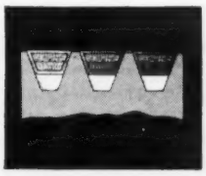


A 300 HP. Dodge "D-V" Drive on Tube Mill Drive in Cement Mill. Important advantages are high ratio speed reduction — ability to absorb shock — substantial power savings.

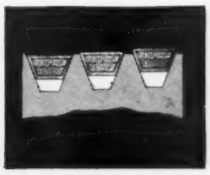


D-V Belt on straight run shows concave side walls. Latex impregnation insures against cord separation.

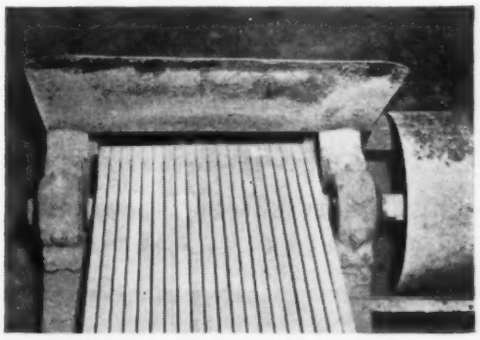
D-V Belt around sheave shows how concave side walls expand on flexing over sheave.



Accurately machined sheave grooves, match V-Belts dimension — give even pull on all belts.



When sheave grooves are not uniform, power loss and excessive wear results.



This 200 HP. Dodge "D-V" Drive has been in operation for several years on a twenty-four hour a day schedule in a smelter. Dodge-Timken Type "C" Pillow Blocks, with triple steel seals, keep out dirt and retain lubricant. This prevents oil damage to belts.

DODGE
MISHAWAKA

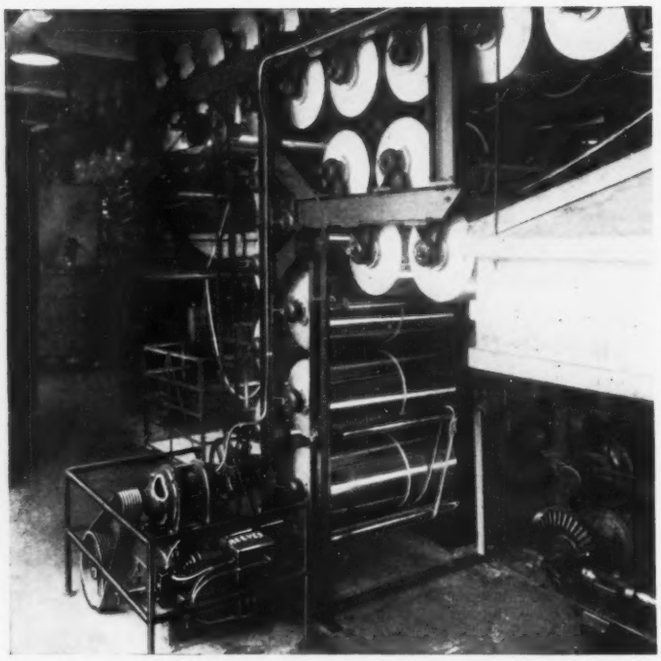
THE RIGHT DRIVE FOR EVERY JOB

THROW ALL YOUR SCRAP INTO THE SCRAP

PUT *ALL* YOUR POWER IN THE JOB

Synchronizing

DRY CANS AND DYE MACHINE



***with* REEVES Hydraulic Automatic Speed Control**

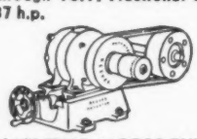
● In this installation a No. 3-D REEVES Transmission, with hydraulic automatic control, drives a battery of Morrison Dry Cans and automatically synchronizes them with a dye machine. Hydraulically controlled REEVES Transmissions are also used to synchronize the operations of other textile machines—or separate sections of a single machine—for straight line production. They help maintain constant tension, uniform peripheral winding speeds, uniform pressure, weight, liquid level, temperature, and other variable elements. . . . REEVES Variable Speed Drives are the textile industry's approved method for securing infinite, variable speed regulation. Standard equipment on most leading makes of machines—easily applied to machines in service. Catalog-Manual WG-419, sent on request.

REEVES PULLEY COMPANY

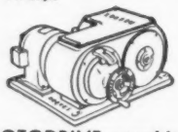
COLUMBUS • INDIANA

3 BASIC UNITS

VARIABLE SPEED TRANSMISSION for infinite speed control over wide range—2:1 through 16:1. Fractional to 87 h.p.



VARI-SPEED MOTOR PULLEY for application to shaft extension of any standard constant speed motor; 3:1 range. To 15 h.p.



MOTODRIVE—combines motor, variable speed drive and gear reducer (if needed). Speed range 2:1 through 6:1; to 10 h.p.

REEVES Speed Control

Elastic Synthetic Yarn

American Viscose develops new product with many characteristics of rubber

A NEW, HIGHLY ELASTIC synthetic yarn, possessing many of the characteristics of rubber, has been developed by American Viscose Corp. In fact, the new yarn, which is derived from vinylite resin, is said to be superior to rubber for some applications. At present the entire output is required for use in textiles for military purposes. The yarn is now being produced in two sizes—500 and 1,000 den., with 120 to 480 filaments. Like rubber thread, it can be covered with cotton, rayon, or other yarns; but for many applications it can be used without covering. It can be woven, knitted, or braided on conventional types of textile machinery. As yet, no name has been selected for this yarn.

Elongation at break ranges from 150 to 400%, depending on the method of manufacture. Likewise, the true elasticity can be varied by changes in the manufacturing process. The yarn has excellent resistance to sunlight, humidity, and perspiration.

Treatment in boiling water does not have a deleterious effect on the elongation or elasticity. At low temperatures, however, these properties are impaired. The yarn is dissolved by certain solvents which do not have a solvent action on rubber, and hence should not be exposed to those solvents. In color, the new product is grayish-white; as yet no attempts have been made to dye it or to produce spun-dyed yarn.

The resins employed are of the vinylite type produced by Carbide & Carbon Chemicals Corp. However, the new elastic yarn itself is a development of American Viscose Corp. A variation of the product can be employed in the manufacture of various articles now made of sponge rubber. In its present stage of development, it does not appear to be a substitute for rubber in automobile tires.

In addition to its use in a number of textiles for strictly military purposes, the new yarn is being experimented with for numerous items of clothing for the WAAC. It is believed that some of the yarn may be released for manufacture of certain articles for surgical applications.

Numerous types of elastic textiles have been made experimentally from the new yarn. These include webbing, tapes, cords, surgical stockings, corset and brassiere cloth, etc. It is expected that eventually the new yarn will be employed commercially for producing these and other elastic textiles for civilian purposes, although at present the vinyl resin from which it is derived is under allocation.

★ ★ ★

New Callaway Ad Mat and Copy Book

Callaway Mills have published their new annual "Advertising Layout, Mat and Copy Book." Only a limited edition has been run, and its distribution will be confined to retail stores carrying Callaway towels, rugs and ensembles.

Functional in character, the book has been designed to simplify and speed up the work of retail layout artists and copywriters. It contains 31 sheets with red-white-and-blue covers.

A cross index in the back enables the user to find in a few seconds the illustrations and copy of any style name or number. Numerous practical layouts and copy are built around bathroom interiors displaying the Callaway complete bathroom ensembles. There is wide selection of cuts for use in selling matched towel sets, beach towels, tufted and chenille rugs, mats and lid covers.

"for accomplishing more than seemed reasonable or possible a year ago"

THE Army-Navy Award for "high achievement in the production of war materiel" has been won by the "men and women of the Cramerton plant." In his letter of citation, Robert P. Patterson, Under Secretary of War, goes on to say: — "Your patriotism, as shown by your remarkable production record, is helping our country along the road to victory."

The story behind the winning of the coveted "E" dates back to 1930, when Cramerton assisted the Quartermaster Depot at Philadelphia in the development of the present Army Khaki, the official cotton uniform cloth. The first government order for this fabric was placed with Cramerton Mills. Ever since, Cramerton Army Cloth has been regularly furnished to the U. S. Army. Now Navy and Marine Corps officers wear it as well. This is by no means the only military fabric made by Cramerton, but its production has been a major objective for 12 years.

The management congratulates the people of Cramerton, whose efforts and skill have earned this high award, and pledges the continued concentration of the entire personnel on the task that lies ahead.

Cramerton Mills

CRAMERTON NORTH CAROLINA

Selling Agents: Galey & Lord, 57 Worth Street, New York City

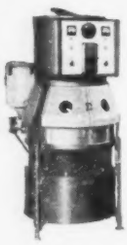
FEDERAL SPECIFICATIONS *call for* ATLAS-OMETERS

● Atlas-Ometers are the original, accelerated testing machines which must be used to comply with many Federal Specifications.

LAUNDER-OMETER
—for accelerated washing tests

Standard laboratory washing machines of the A.A.T.C.C.—measures resistance to washing action, shrinking, staining, color fastness to soaps and solvents. All factors, including washing action, carefully controlled—can be reproduced exactly at any time.

FADE-OMETER
—for accelerated fading tests



Rotates specimens around the Atlas Enclosed Violet Carbon Arc, the closest approach to natural sunlight. Temperature automatically controlled.

WEATHER-OMETER
—for accelerated weathering tests

Duplicates effect of actual exposure—months of sun, rain, heat, and cold condensed to a few days.

ATLAS ELECTRIC DEVICES COMPANY
371 W. Superior Street, Chicago, Illinois

ATLAS-OMETERS *Accelerated Testing Equipment*
FADE-OMETER • LAUNDER-OMETER • WEATHER-OMETER

THE TERRELL CLEANING AND HANDLING SYSTEM

The improved TYPE K stripper, Automatic Bobbin Box Hoist and Conveyor Elevator—a modern, compact system for increasing the efficiency and lowering the cost of bobbin cleaning and handling.

The **Terrell Machine Co.,** *Inc.*
CHARLOTTE, N. C.

James F. Notman, Needham, Mass. . . . . N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J. Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . Canada
Geo. Thomas & Co., Manchester, Eng. . . European Agent

NEWS ABOUT MEN

Rush S. Dickson, Charlotte, N. C., has been elected president of American Yarn & Processing Co., Mt. Holly, N. C. He succeeds C. E. Hutchinson, Sr., who died recently. Mr. Dickson is head of the R. S. Dickson Investment Co., which recently acquired control of the company. The Dickson firm has other textile interests throughout the South.

R. S. DICKSON

Revell McCallum has been elected president of the Propper-McCallum Hosiery Co., Northampton, Mass., succeeding his father the late George B. McCallum. The younger McCallum was formerly secretary-treasurer, and in this post he has been succeeded by **Philip J. Farley.**

George Leckie has been elected treasurer and general manager of the Brunswick Worsted Mills, Moosup, Conn. He will serve on a board consisting also of **William Mudge,** plant manager and vice-president in charge of production, and **E. J. Seaton,** assistant treasurer and accounting officer, to guide the operation of the business during the absence of **Henry C. Haskell,** president of the firm who is now a lieutenant-commander in the Navy.

Nathaniel T. Stevens, president of M. T. Stevens & Sons Co., appeared as usual at his desk in the company's offices, North Andover, Mass., one day recentlly when he reached his 85th birthday.

Auguste Richard has resigned as vice-president and director of Pacific Mills, New York, to accept the chairmanship of the Army and Navy Munitions Board. Mr. Richard's headquarters will be in Washington, D. C. **J. E. Bradley,** merchandise manager of the Cotton and Rayon Division, has been appointed general manager to succeed Mr. Richard, as head of Pacific's Cotton and Rayon Division. Mr. Bradley's headquarters will be at 214 Church Street, New York. He was a guest of honor at a luncheon on Nov. 10 tendered by the dry goods trade.

William H. Marland, president of Sanford (Me.) Mills, has been elected president of Goodall Worsted Co., also of Sanford, succeeding **Col. Wm. N. Campbell** who has been made a director. Mr. Marland continues as Goodall's chairman of the board.

Walter S. Montgomery, president of Spartan Mills and Beaumont Mfg. Co., Spartanburg, S. C., has been selected as one of a group of 100 handpicked business executives who will attend a 30-day orientation course at the Army General Staff School, Fort Leavenworth, Kan. Mr. Montgomery, widely known in southern mill circles, will represent the cotton goods industry at the special school.

Thomas Dowd, vice-president, has been elected president of Ming Toy Dyeing Co.,

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RALPH L. CHISHOLM, who for the last 13 years has been in charge of research, development, sales promotion, and advertising for the Universal Winding Co., Providence, R. I., has accepted the position of New England district manager for TEXTILE WORLD, with headquarters at 1427 Statler Building, Boston. He succeeds EDWIN D. FOWLE, who has been promoted to the office of publisher of TEXTILE WORLD, in the place of M. A. Williamson, who will devote all his time to two other McGraw-Hill papers of which he is publisher. Mr. Fowle, prior to taking the New England territory for TEXTILE WORLD in 1937, was for many years associate editor of this publication. Prior to Mr. Chisholm's association with the Universal Winding Co., he was for 10 years connected with Lockwood Greene & Co. in various capacities, ranging from apprentice, through treasurer's assistant, to agent, Winnsboro (S. C.) Mills.

For Shirts or 'Chutes—ROBBINS MAPLE

"No Possible Chance of Splintering," says Piedmont Shirt Co., maker of WINGS Shirts.

Floors that Lay Faster, Wear and Look Better, are Easier to Maintain—in War, as in Peace . . .

ROBBINS SPECIAL FEATURES:

Robbins Nail Grooves—no need to set nails—floor lays faster.

Robbins Beveled Bottom Edges — protect layer's hands, speed up laying. Won't scuff building paper.

Robbins Narrow Channel Back—3 bearing points with sub-floor or sleepers.

ROBBINS SPECIAL FLOORINGS:

Ironbound Continuous Strip Maple, laid direct on concrete in mastic—more sanitary, wears longer, moves traffic faster. Edge Grain or Flat Grain.

Ironbound Unit Blocks — Maple, Beech, Birch and Oak.

Robbins Jointed (Square Edge) Flooring —for easy, quick replacement in heavy-duty areas.

Robbins Treated Hard Maple Flooring—protected from termites and moisture. Special thicknesses, widths, special matchings and patterns.

For remarkably low maintenance cost, the Tennant System (G. H. Tennant Company, Minneapolis, Minn.) is recommended.

The same outstanding advantages—long wear, low maintenance, handsome appearance—that have made Robbins Maple Flooring the peacetime choice of scores of textile mills, now make them a wartime necessity in war production plants throughout America!

Robbins is delivering — and delivering *on time* — Northern Hard Maple flooring for textile, aircraft, ordnance and other plants, directly or indirectly, in war production. New jobs running up to 2,000,000 feet; re-flooring jobs requiring 100,000 feet; jobs of every size, in plants of every kind, *wherever floor-performance* means most.

Robbins Flooring is Northern Hard Maple at its toughest best—slow-growth northern Michigan and Wisconsin maple; accurately milled, scientifically seasoned, backed by 60 years of flooring manufacturing experience.

Consider carefully the special features and special floorings listed at left. Get Robbins suggestions before you build, or remodel.

* *Southeast Representatives:* Bright Brooks Lumber Co., Savannah, Ga., Charlotte, N. C., Atlanta, Ga. *Philadelphia:* Geo. Lippincott, 1512 Walnut St. *New York and New England:* T. M. Ralston, 5634 Grand Central Terminal, New York City.

ROBBINS FLOORING COMPANY

General Offices: Rhinelander, Wis. — Mills: Rhinelander, Wis., Newberry, Mich.

Member of Maple Flooring Manufacturers Association

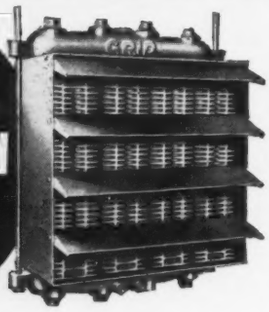
***Write them . . . or write us direct—Robbins Flooring Company, Rhinelander, Wisconsin**

MILLIONS WALK DAILY ON ROBBINS FLOORING

IT'S STILL A *different* UNIT HEATER

High test cast iron takes the place of aluminum for the heating sections, to cooperate with the war effort in using substitute materials—but it's still the ultimate in unit heater quality.

NOW made with CAST IRON Heating Sections



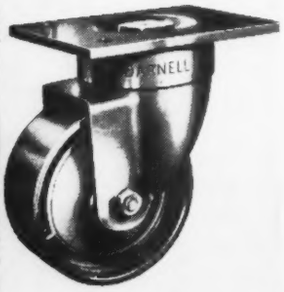
THE new Grid is engineered along the same lines as the Grid Unit which had aluminum heating sections—dependable, long life unit. A special design for performance. Patent applied for. No corrosion—no leaks or breakdowns . . . In this new Grid Unit there is only one type metal in contact with steam or hot water. There is nothing to cause electrolysis that produces corrosion. Engineered and constructed to withstand up to 250 lb. steam pressure. Ask for new catalog, engineering data and capacity tables.

D. J. MURRAY MFG. CO., Wausau, Wis.

Offices in Principal Cities

GRID UNIT HEATER

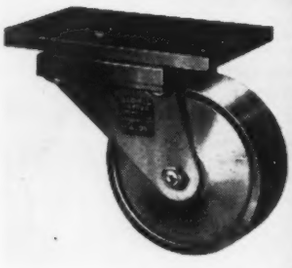
A SAVING AT EVERY TURN



DARNELL

CASTERS & E-Z ROLL WHEELS

...meeting today's strictest demands!



DARNELL CORP. LTD
LONG BEACH, CALIFORNIA
60 WALKER ST., NEW YORK, N.Y.
36 N. CLINTON, CHICAGO, ILL.

NEWS ABOUT MEN

Haledon, N. J., succeeding the late Charles Singer.

Josef Pollack, of Max Pollack & Co., New York, chairman of the board of directors of Cotton Thread Institute, Inc., was guest of honor at a testimonial luncheon in connection with the annual convention of the organization in New York on Oct. 26. Over 125 representatives from leading thread producers and allied concerns attended to pay homage to Mr. Pollack for his efforts in behalf of the industry over a period of 20 years. **E. Martin Philippi,** chairman of the board of directors of the American Thread Co., was chairman of the luncheon session.

Samuel J. Bush, credit manager for the last 16 years of M. Lowenstein & Sons, Inc., New York and **S. L. Hagan,** general sales manager of that firm since 1931, have both been elected vice-presidents of the firm.

M. T. Drexler has acquired one-third interest in Decorative Fabrics Co., Pawtucket, R. I., and been elected vice-president of the corporation. He has recently been New York selling agent for the firm.

John K. Voehringer, Jr., president of Mock-Judson-Voehringer, Inc., Greensboro, N. C., has been elected president of Alabama Hosiery Mills, Decatur, Ala., succeeding **L. L. Lively.**

Arthur B. Otto, of Jonathan Ring Co., Philadelphia, has been re-elected president of the Philadelphia Textile Manufacturers Association. **R. A. Lukens,** Continental Mills, is first vice-president, **L. S. Mason,** S. & M. Dye Works, second vice-president, and **John E. Fite, Jr.,** Krout & Fite Mfg. Co., secretary. **C. Marvin Bell** is managing director.

Mrs. J. K. Hughes has been elected president of Mexia (Tex.) Textile Mill, succeeding her husband, the late J. K. Hughes. Mr. Hughes founded the business 20 years ago.

George Nichols, treasurer of Dwight Mfg. Co., of Boston, and **Fred W. Symmes,** president of Union-Buffalo Mills Co., Greenville, S. C., have been elected to membership in the New York Cotton Exchange.

W. P. Leister, for 20 years superintendent of Victor-Monaghan plant of Victor Mills, Walhalla, S. C., has retired and is succeeded by **Troy H. Carter** of Greer, S. C.

Joseph F. Chalmers, general superintendent of the J. C. Self group of textile mills at Greenwood, S. C., recently attended the re-union and war conference of the North Sea

JOSEF POLLACK

Mine Force Association, in New York. The members are those who participated in the laying, and later sweeping, of some 56,000 mines in the North Sea during 1918 to 1919. Mr. Chalmers served on the U.S.S. Quinnebaug.

A. C. Layton Newsom, of Lockhart International, Inc., New York, has been appointed secretary and merchandising director of the Durene Association of America, New York, and the offices removed from 470 Fourth Ave. to 122 East 42nd St. **R. B. King,** of the Hampton Co., was elected president, and **J. P. Holt,** of Aberfoyle Mfg. Co., treasurer.

John A. Spooner, formerly advertising manager of the American Viscose Corp., New York, has been named national advertising manager of the magazine "Mademoiselle," published by Street & Smith.

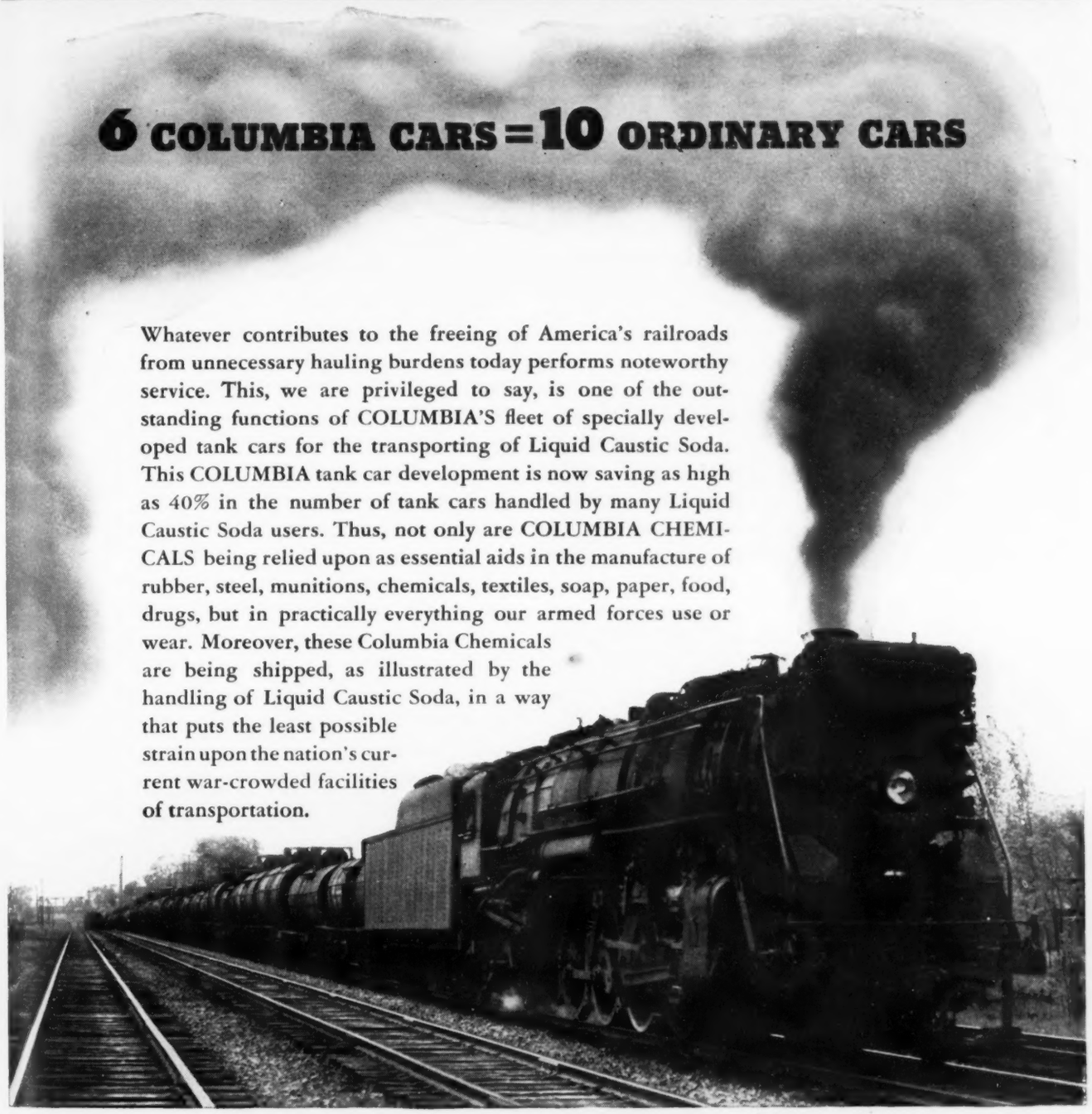
S. Marshall Beattie, for 19 years president of Piedmont (S. C.) Mfg. Co., was honored on Oct. 25, when 500 residents of Piedmont gathered for a birthday party. The principal speaker was **Dr. William P. Jacobs,** executive secretary of the South Carolina Cotton Manfacturers' Association. Making brief talks on behalf of the employes were **George McAbee, D. M. Reeves, Henry Winn, E. A. Brown** and **Benson Davis.**

Basil Browder and **Russell Newton** have been elected vice-presidents of the Riverside & Dan River Cotton Mills, Danville, Va. Mr. Browder is assistant to **George S. Harris,** president, and Mr. Newton is general superintendent of the mills.

Adair Wright, New York, was recently elected vice-president of Deering Milliken & Co., textile selling agency with headquarters in New York. Mr. Wright has been with that

COLUMBIA CHEMICALS

6 COLUMBIA CARS = 10 ORDINARY CARS



Whatever contributes to the freeing of America's railroads from unnecessary hauling burdens today performs noteworthy service. This, we are privileged to say, is one of the outstanding functions of COLUMBIA'S fleet of specially developed tank cars for the transporting of Liquid Caustic Soda. This COLUMBIA tank car development is now saving as high as 40% in the number of tank cars handled by many Liquid Caustic Soda users. Thus, not only are COLUMBIA CHEMICALS being relied upon as essential aids in the manufacture of rubber, steel, munitions, chemicals, textiles, soap, paper, food, drugs, but in practically everything our armed forces use or wear. Moreover, these Columbia Chemicals are being shipped, as illustrated by the handling of Liquid Caustic Soda, in a way that puts the least possible strain upon the nation's current war-crowded facilities of transportation.

ESSENTIAL INDUSTRIAL CHEMICALS

SODA ASH • CAUSTIC SODA • SODIUM BICARBONATE • LIQUID CHLORINE • SILENE* CALCIUM CHLORIDE • SODA BRIQUETTES MODIFIED SODAS • CAUSTIC ASH • PHOSFLAKE CALCENE** • CALCIUM HYPOCHLORITE

*Precipitated Calcium Silicate **Precipitated Calcium Carbonate

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY

COLUMBIA CHEMICAL DIVISION

GRANT BUILDING, PITTSBURGH, PA.

CHICAGO • BOSTON • ST. LOUIS • NEW YORK • CINCINNATI

CLEVELAND • MINNEAPOLIS • PHILADELPHIA • CHARLOTTE

SODIUM ACETATE

TECHNICAL 60% AND ANHYDROUS GRADES
ALSO SODIUM DIACETATE

All Niacet Sodium Acetates are free-flowing white granules or powders of guaranteed purity and uniformity.

* * * * *

3 lbs. Anhydrous=5 lbs. 60%

* * * * *

60% Sodium Acetate cools water on solution, but Anhydrous grade will raise the temperature as it dissolves.

For further information write to

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CHEMICALS CORPORATION
4705 Pine Ave. Niagara Falls, N. Y.

SHAMROCK

Canvas **Baskets, Trucks**

Speed-up production—Keep 'em rolling

Ask your Jobber TODAY! MEESE, INC. Madison, Ind.

NEWS ABOUT MEN

company since 1926 in charge of the southern territory.

Raymond L. Collett and **Kenneth M. Lowry** are now associated in executive capacities with Judson Mills, Greenville, S. C.

A. C. Martin, formerly of Greenville, S. C., has been promoted to manager of Laurens (S. C.) Cotton Mills. **V. J. Thompson,** Griffin, Ga., has been made superintendent of the plant.

William H. Tedford, formerly manager of the Addison plant of Kendall Mills, Edgefield, S. C., has been made manager of Kendall's Thrift branch, Paw Creek, N. C. **Carl Gelpke** has succeeded Mr. Tedford as manager of the plant at Edgefield.

Jim McAden, Charlotte, N. C., was recently elected secretary of the Southern Textile Association, succeeding **Ellis Royal** who is now a lieutenant in the Army.

Ralph Bradford has been appointed general manager of the Chamber of Commerce of the United States, Washington, D. C., according to **Eric A. Johnston,** Chamber president. Mr. Bradford, secretary of the Chamber since 1939, was named to the newly created office by the Chamber's board of directors as a step in the general reorganization of the Chamber's machinery of operation now under way.

William H. Tedford, for some time general manager of the Addison plant of Kendall Co., Edgefield, S. C., has been appointed manager of the Thrift plant of the Kendall Co., Paw Creek, N. C. He was succeeded at Enfield by **Carl Gelpke,** formerly an overseer at the Pelzer, S. C., plant of the company.

Carman G. Blough, an authority upon accounting economics, has been appointed chief of the Contract Review Branch of the Procurement Policy Committee of WPB.

Clifton Watson, manager of southern sales for Emmons Loon Harness Co., Lawrence, Mass., and Charlotte, N. C., who in recent months had been serving with WPB, has been appointed chief of the Textile Accessories Division of the Textile Machinery Branch.

George E. Westberg, who joined the Textile, Clothing and Leather Goods Branch of WPB under Frank L. Walton on Jan. 4, has returned to his former post as vice-president in charge of Berkshire Fine Spinning Associates New York office. For the last four months Mr. Westberg has been chairman of the Textile Joint Procurement Committee in the Division of Procurement Policy. He will remain on call by WPB and other war agencies as a consultant.

W. L. BALTHIS, Gastonia, N. C., who is the newly elected president of the Southern Combed Yarn Spinners Association. He is president and treasurer of Peerless Spinning Corp., Lowell, N. C., and Balston Yarn Mills, Lincolnton, N. C., and president of Insulating Yarns, Inc., Lowell, N. C. Mr. Balthis served with distinction as captain in the Army during the first World War. Cited for outstanding work in the Chateau Thierry and Soissons battles, he received the Inter-Allied Victory Medal and French Grande Guerre Medaille.

Delmar F. Reynolds has joined Riverside & Dan River Cotton Mills, New York, in a sales capacity. He has had a broad textile experience and for the last two years has been selling for W. E. McKay Co. in the West.

Robert I. Gordon, of James H. Dunham & Co., New York, is now president of the Cotton Piece Goods Salesmen's Association of New York.

Waldemar R. Kuenzel, acting manager for the last year of the Fabric Development Department of the Rayon Division of E. I. du Pont de Nemours & Co., Wilmington, Del., has been made manager of fabric development.

H. Deane Morrison, of Manchester, was elected for a third term as president of the New Hampshire Manufacturers' Association at the annual meeting in Manchester, last month. Also elected were: **Charles E. Greenman,** of Hampton, vice-president; **Malcolm C. MacKenzie,** of Derry, treasurer; **John J. Cummings** of Manchester, traffic counsellor and executive secretary; executive committee, **A. F. Bell,** of Bennington; **W. W. Edwards,** of Franklin, **Maj. A. E. Goyette,** of Peterborough; **J. R. Jackman,** of Concord, and **S. R. Goldman,** of Milford.

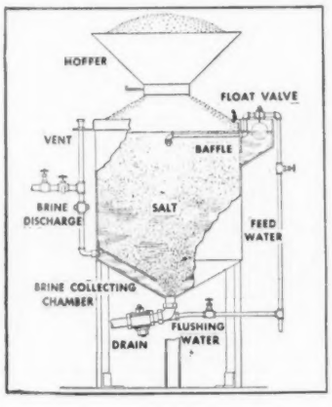
Perfect Zeolite Regeneration Plus 10% to 20% Savings in Salt —Yours with Lixate Brine!

You can say goodbye to your Zeolite Water Softener regeneration troubles the day you install a Lixator . . . it eliminates the problems and guesswork involved in preparing brine! Lixate Brine is automatically produced . . . always *crystal-clear* and *fully saturated.*

A Lixator saves you real money, too . . . utilizes inexpensive Sterling Rock Salt; requires *less* salt; cuts labor cost for mixing and handling the brine! Not only does the Lixate Process prove a self-liquidating investment for Zeolite regeneration . . . it will step up the efficiency of your dyeing—do a better job *wherever* you use salt in your mill!

IMPROVED ZEOLITE REGENERATION . . . Lixate Brine is ideal because it is crystal-clear, fully saturated and free from insolubles. Produced automatically, it is always the proper strength, above minimum of 23° Baume, as recommended by Zeolite Water Softener manufacturers. In action, the Lixate Brine restores the original efficiency of the Zeolite by removing and carrying away the calcium and magnesium. The process is automatic, needs so little time, it will not interfere with your production schedule.

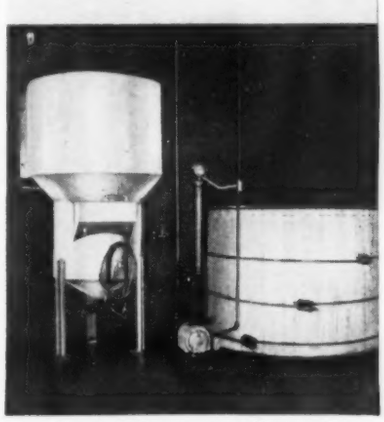
LEVEL DYEING WITH LIXATE BRINE . . . In contrast to "dry" salt processes which often produce imperfectly dyed cloth . . . Lixate Brine is *always* fully saturated and of controlled density. It immediately disperses evenly throughout the vat . . . eliminating spotting, streaking and white edges in the dyeing.



HOW THE LIXATE PROCESS WORKS . . . International's inexpensive Sterling Rock Salt flows by gravity from the hopper into the Lixator. Water enters through the nozzle at top, dissolves the salt without agitation, becomes fully-satured brine. This brine is self-filtered and then rises crystal-clear in collecting chamber to discharge pipe. Repeated tests have shown that Lixate Brine is as chemically pure as brine made by mixing water with salt that is 99.63% pure!

4-WAY PRODUCTION SAVINGS!

1. **No labor cost for mixing brine.**
2. **Users report 10% to 20% savings in amount of salt required.**
3. **Lower cost for handling salt.**
4. **Lower cost for distributing brine instead of dry salt throughout plant.**



A typical Lixator installation for Textile and Dyeing Plants

FREE CONSULTATION! *Would you like the complete details—facts and figures—on what a properly installed Lixator can do for your mill? An International Field Engineer will be glad to call at your convenience.*

The **LIXATE** *Process*
Reg. U. S. Pat. Off.
for making brine

INTERNATIONAL SALT COMPANY, INC., DEPT. T-11, SCRANTON, PENNSYLVANIA

LEWIS AIR LIFT

for use on

FOLDING MACHINES

WITH WOMEN increasingly replacing men as folding machine operators, textile mills and finishing plants are faced with the problem of making their mechanical equipment easier to operate, as well as keeping it at top-notch efficiency to meet the present challenge of production.

The Lewis Pneumatic Table-Lift eliminates the conventional foot treadle and the heavy work of raising the folding machine table by foot. This is especially hard on folders of larger than 4 or 5 inch capacity.

This Lift is operated by compressed air, usually available in mills and finishing plants—where not available a compressor can be supplied.

Ask Us More About It!

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS.

FIRST CALL

DRUMMOND SOAP

Drummond has first call with textile finishers who "know their soaps" . . . . A high-body product of low alkali content . . . . No filler of any kind . . . . A high binding quality that results in minimum flocking. Saves on steam and water because it rinses easily and completely . . . . Better fulling and scouring . . . . Leaves fabrics perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . . Want to try it? Just write us today for a free working sample and test Drummond Soap on your own goods.

LIBERTY—PEACE—SECURITY

THEY'RE WORTH EVERY BOND YOUR MONEY CAN BUY.

Standard Soap co. of camden

Charlotte, N. C. CATO M. LITTLETON 426 PARK TERRACE • 205 South 2nd St. Camden, N. J. • Woonsocket, R. I. G. TANGUAY 281 HARRIS AVE.

NEWS ABOUT MEN

Harry Purvis, superintendent of Chicopee Mfg. Co. of Georgia, Gainesville, Ga., has gone to Sao Paulo, Brazil, where Johnson & Johnson, owners of the Chicopee mills, have a textile plant, of which **Charles A. Rudolph,** formerly of Gainesville, is now manager. Mr. Purvis will spend two months at the Brazil mill.

Jim McAden, of Charlotte, N. C., is the new secretary of the Southern Textile Association.

A. C. Martin, Jr., assistant manager of Laurens (S.C.) Cotton Mill, has been promoted to manager.

C. F. Chapman, western representative of Larkwood Hosiery Co. for a number of years, has been appointed to succeed **Jere Lumbert** as the New York sales manager.

Raphael Sampedro, for 14 years with E. Sutro & Son, York, Pa., who for the last three years was assistant manager at Red House Mfg. Co., Eleanor, West Va., has been promoted to manager succeeding **Robert Blair McArthur,** who has entered the U.S. Army.

H. C. McKenna, superintendent and assistant secretary-treasurer of New Braunfels (Texas) Textile Mills, has been elected president of the New Braunfels Chamber of Commerce.

William J. Bieberle has been transferred from the Philadelphia, Pa., sales office of American Viscose Corp. to the Viscose Sales Division of the company's New York office. He will continue his contacts with the hosiery trade in the Middle West.

Edmund J. Dupre, lately with Pontiac (R. I.) Finishing Co., has been appointed an instructor in the chemistry, dyeing and finishing department of the New Bedford (Mass.) Textile School.

Moe Aronsohn has rejoined Empire Piece Dyeing & Finishing Co., Paterson, N. J., in his former capacity as sales manager.

M. D. Harrington has resigned as secretary and treasurer of the Uptown Credit Group, an association affiliated with the National Federation of Textiles, Inc., New York.

Solon Schiller, for 14 years with Cheney Bros., New York, has joined Iselin-Jefferson Co. to assist Thomas B. Hill, sales manager of the finished rayon goods department.

Harry F. Williams, lately with the South Carolina State Unemployment Compensation Board, has become personnel manager of Aragon-Baldwon Mills, Whitmire, S. C.

CARL S. KINCAID, president of Magnet Mills, of Clinton, Tenn., who has gone to Washington to become chief of the hosiery unit of the WPB Textile, Clothing and Leather Branch as reported last month. He succeeds JAMES D. MAYER, who resigned to return to private business.

Harry A. Greene, assistant superintendent at Continental Mill, Lewiston, Maine, has become superintendent of Quissett Mills, New Bedford, Mass.

Ben Shaevel, purchasing agent and traffic manager for the Malden (Mass.) Knitting Mills, has joined the Manchester (N.H.) Knitting Fashions, Inc. in the same capacity.

W. P. Williamson of Guntersville, Ala., plant of the Saratoga-Victory Mills, has been transferred to the Albertsville, Ala., plant of the same company and promoted to overseer of weaving.

A. A. Parks, formerly assistant to the overseer of weaving at No. 1 plant of Springs Cotton Mills, Fort Mill, S. C., has been transferred to No. 2 plant of the same company and promoted to overseer of weaving.

J. B. Powell, formerly overseer of the cloth room of Drayton (S.C.) Mills, has become night superintendent of Erlanger Mills, Inc., Lexington, N. C.

Carl Richardson is now superintendent of Rushton (Ga.) Cotton Mills, having been promoted to this position.

H. Cleon Estes has been promoted from assistant to superintendent of the Inman (S.C.) Mills.

J. E. Holt is now overseer of carding at the Shelbyville (Tenn.) Mills, a unit of United States Rubber Co.

I. W. Ledford has been promoted to superintendent of the mechanical department of Phenix Mills, No. 1, Kings Mountain, N. C.

Chlorine Fights with the Fleet!

America is the United Nations' production line! Down that production line now comes an endless number of materials—supplies for our Navy, our Army, our Air Force and our Allies. *Chlorine is helping produce them!*

SYNTHETIC RUBBER

GASOLINE

EXPLOSIVES

TEXTILES

DYESTUFFS

TREATMENT of WATER

PLASTICS

SOLVENTS

STERILIZATION

MOTOR COOLING FLUIDS

HIGH PRESSURE LUBRICANTS

SOLVAY SALES CORPORATION *Alkalies and Chemical Products Manufactured by The Solvay Process Company*

true rib
FOR PERMANENT ELASTICITY
SNUG FIT IN HOSIERY TOP
Here is the machine to put permanent elasticity and snug fit into hosiery tops—at minimum expense. Every part and every motion of the FIDELITY Universal Ribber reduces cost. Dogless has no vibrating parts — avoids repairs and delays. Free vertical dial movement makes "picking up" easy. To inspect an entire section of the dial, simply loosen one thumb screw. Loose course plate reduces needle breakage. Heads, interchangeable without new dogless parts. Take-up gears entirely enclosed prevent oil spots and seconds. One-piece frame increases rigidity. FIDELITY Universal Ribber operates with less noise, vibration, attention. Write for detailed information and data.
FIDELITY MACHINE COMPANY
3908-18 Frankford Ave., Philadelphia, Pa.

Coming...

TEXTILE WORLD's

75th

ANNIVERSARY

NUMBER

JUNE, 1943

Textile Men in Armed Services

Major General C. L. Corbin, director of the Procurement Division of the Office of Quartermaster General, was recently advanced from the rank of Brigadier General. He is 69 years old and a graduate of West Point, class of 1905. He has seen considerable service at various points overseas, including a period in France during the first world war. He was appointed assistant quartermaster general in April, 1940, and made director of the Procurement Service of QM in March, 1942.

Brig.-General James L. Frink has been appointed Deputy Quartermaster General for Supply Planning and Operations, and **Col. Harold A. Barnes,** Quartermaster Corps, has been appointed Deputy Quartermaster General for Administration and Management. These new offices will absorb the functions formerly performed by the office of the Deputy Quartermaster General.

Col. William R. Buckley has succeeded **Col. Vere Painter** as executive officer of the Philadelphia QM Depot, **Col. Painter** having been assigned to foreign duty. **Colonel Buckley** was officer-in-charge of the manufacturing division of the Philadelphia Depot from 1927 to 1930. He returns to Philadelphia from the office of the Quartermaster General, Washington, D. C., where for the last two years he has been officer-in-charge of the Purchase Branch of the Procurement Division.

Col. Charles R. Baxter, Ordnance Department, U. S. Army has been appointed chief of the new Materials Redistribution Branch of WPB. The new branch will take over the functions and personnel of the Inventory and Requisitioning Branch, which has been responsible since last December for the movement to war industries of idle and excess stocks of strategic materials. Colonel Baxter, a veteran of 30 years' service in the Army, was recalled to active duty in the Ordnance Department last January. Following his retirement in 1937, he had joined the cotton mill division of the Kendall Co., Boston, Mass., as works manager in charge of the production of nine mills, and is now on military leave from that position.

Lt. Bernard Bram, formerly assigned to the Inspection Section, Procurement Division of Philadelphia QM Depot, has been transferred to the Charlotte (N.C.) QM Depot.

Col. W. R. Buckley, now executive officer at Philadelphia Q. M. Depot.

Charles A. Karagheusian, treasurer and director of A. & M. Karagheusian Co., New York, has been commissioned a first lieutenant in the Army and assigned to duties at Camp Lee, Virginia.

Henry C. Haskell, president of Brunswick Worsted Mills, Moosup, Conn., has been granted a leave of absence and been commissioned a lieutenant-commander in the United States Naval Reserves and assigned to the Bureau of Aeronautics, Washington, D. C.

B. P. Anderson, formerly head of the suiting department of Riverside & Dan River Cotton Mills, New York, has been graduated from the School of Procurement and Warehousing at Camp Lee, Va., and assigned to Officers Candidate School.

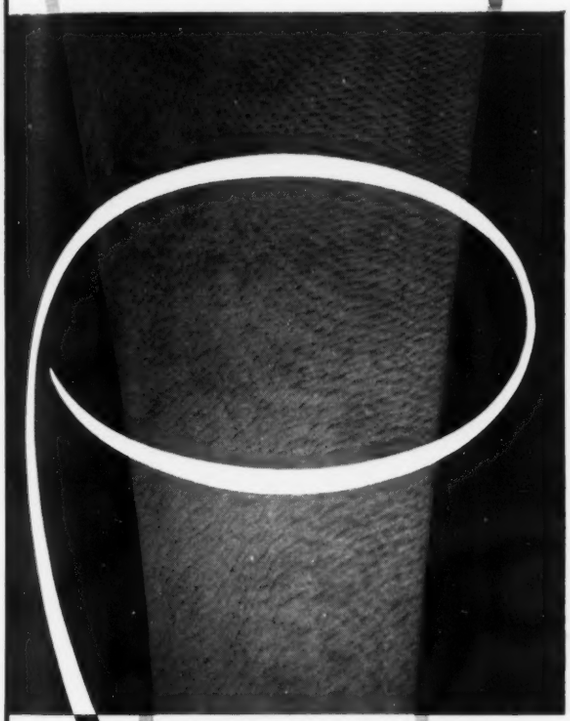
Sherman Trowbridge, until recently acting price-executive of the Textile, Leather and Apparel Section of OPA, has been commissioned a major in the Army.

C. R. Freeman, formerly sales manager in the Boston office of Pepperell Mfg. Co., is now a Navy lieutenant, senior grade, on duty in the Pacific.

Hartland Woodhouse, of Pray & Reilly, New York, has been commissioned a captain in the Army Air Corps.

Joseph E. Goodavage, associate professor of chemistry, dyeing and printing at Philadelphia Textile Institute, has been commissioned lieutenant in Quartermaster Corps. He

Olate Scouring



Uneven dyeing, resulting from inefficient scouring, has ruined the saleability of this rayon stocking.

a sound basis for efficient

RAYON HOSIERY PRODUCTION . . .

The stepped-up demand for rayon hosiery is keeping manufacturers on the jump these days. And introducing some new processing difficulties. A current trouble-maker, according to reports from a number of mills, is uneven dyeing.

There is little doubt that poor scouring is a major cause of uneven dyeing. And poor scouring can usually be traced to one or more of these causes:

1. **The use of improper soaps or scouring oils.**
2. **The use of too little soap.**
3. **Incorrect processing.**

Reports from many important processors of rayon hosiery indicate that when Olate has been used for scouring, little or no trouble is experienced from uneven dyeing. There are many sound reasons why you can depend upon this pure, neutral, low titer soap for a top-notch scouring job.

Olate is a uniform product — its performance is consistently good. Olate's cleansing action — unlike that of many scouring oils — starts the minute its fluid solutions come in contact with hosiery.

• ***Long on Detergency and Economy***

In the matter of detergency, Olate has a decided edge on many soaps and scouring oils. It dissolves rapidly, rinses freely and is highly resistant to oxidation, rancidity and odor development. Interestingly enough, you will find Olate less expensive than the average proprietary scouring oil.

If uneven dyeing is a "problem child" in your plant — if your present scouring compound is slowing up hosiery production — try Olate. You'll find it a sound investment from the standpoint of scouring efficiency, safety, economy and the saleability of your product.

PROCTER & GAMBLE

Olate

Safe and efficient for every Textile Soap Usage

BY THE MAKERS OF JOHNSON'S WAX
. . . A WATER REPELLENT
TEXTILE FINISH

DRAX

Johnson's Water Repellent Textile Finish, Drax, is a stable, aqueous emulsion of waxes and noncritical aluminum salts and emulsifying agents. Its use insures high spray and hydrostatic pressure tests. Drax does not change the color or "hand" of textiles. Nonflammable. May be used on vat or sulphur-dyed textiles. No objectionable odor. Acidity does not need regulation. Inexpensive to use. Supplied to meet Army Quartermaster Department specifications.

For free test sample and full information, write

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KEEPS THE MILL
MACHINERY MOVING

NEWS ABOUT MEN

reported for active duty on Oct. 5 at the Philadelphia Depot. Professor Goodavage has been on the staff of the textile school for 20 years.

Joseph Manfred Block, vice-president of Southland Mfg. Co., Wilmington, N. C., has reported to Ft. Bragg. N. C., for duty in the Army.

Joseph A. Porter, formerly assistant professor in the textile school, North Carolina State College, Raleigh, N. C., has received a commission as a first lieutenant in Army Air Corps and is now stationed at Miami Beach, Fla.

Charles D. Harman, Waynesboro, Va., associated with E. I. du Pont de Nemours & Co., has entered the Navy with the commission of a lieutenant, junior grade. He was graduated from the Engineering School of the University of Virginia.

Louis H. Brendel, manager of jobber distribution of Manning, Maxwell & Moore, Inc., Bridgeport, Conn., has entered the Navy as a lieutenant commander in the newly formed Incentive Division.

Robert Blair McArthur, formerly with Dexdale Hosiery Mills Lansdale, Pa., who was assistant manager at Cumberland Mfg. Co., Crossville, Tenn., prior to his promotion to manager at Red House Mfg. Co., Eleanor, West Va., has resigned in order to enter the armed forces of the United States. Raphael Sampedro, of York, Pa., succeeds him.

Philip C. Gossett, assistant treasurer of Chadwick-Hoskins Co., Charlotte, N. C., has been commissioned a lieutenant, junior grade, and has reported for duty at the U. S. Naval Aviation Air Station, Quonset, R. I.

Pete Littleton, formerly manager of one of the plants of Charles H. Bacon Co., Loudon, Tenn., is now serving in the Army.

Perry R. Cassidy, former executive assistant, Babcock & Wilcox Co., New York, is now lieutenant colonel in the Army Engineer Corps. He was a captain in the Coast Artillery in World War I.

W. W. Ingle, a graduate of the textile department of the North Carolina State College, Raleigh, N. C., has resigned his position with the Charlotte (N.C.) Chemical Laboratories and has entered the chemical warfare division of the army and is stationed at Edgewood Arsenal, Md.

John Liljeberg, former shipping clerk at Milford (N.H.) Textile Corp., has been commissioned as second lieutenant in Field Artillery after graduating from the Officer Candidate School at Fort Sill, Okla.

B. P. Anderson, formerly head of the suiting department of Riverside & Dan River Cotton Mills, Danville, Va., has graduated from the School of Procurement and Warehousing at Camp Lee, Va., and has been assigned to Officers Candidate School.

William G. Luqueer, on leave of absence from General Dyestuff Corp., New York, is now on duty as a captain in the Army at Fort Oglethorpe, Ga.

Raymond J. Carey, also on leave of absence from General Dyestuff Corp., New York, is now a first lieutenant in the Chemical Warfare Reserves at Edgewood Arsenal, Md.

Dan W. Donahue, special sales representative of the cravat department of Cheney Bros., New York, has resigned to accept a commission in the Army.

Henry G. Choquet, formerly with Glenshire Woolen Co., New York, has been commissioned a lieutenant in the Army and assigned to the Philadelphia QM Depot.

William C. Rabenau, of Parker, Wilder & Co., New York, has been commissioned a lieutenant, junior grade, in the U. S. Coast Guard.

James C. Duff, a chemist of the Cumberland, Md., plant of Celanese Corp. of America, is now lieutenant in the Army and has reported for duty at Keesler Field, Miss.

Marchant Cottingham, for the last few years superintendent of Inman Cotton Mills, Spartanburg, S. C., is now a lieutenant in the Army and is on duty in Great Britain.

Helen Mazurek, employed in the inspection department of Berkshire Knitting Mills, Reading, Pa., for last two years, has been accepted for enlistment in the WAAC's.

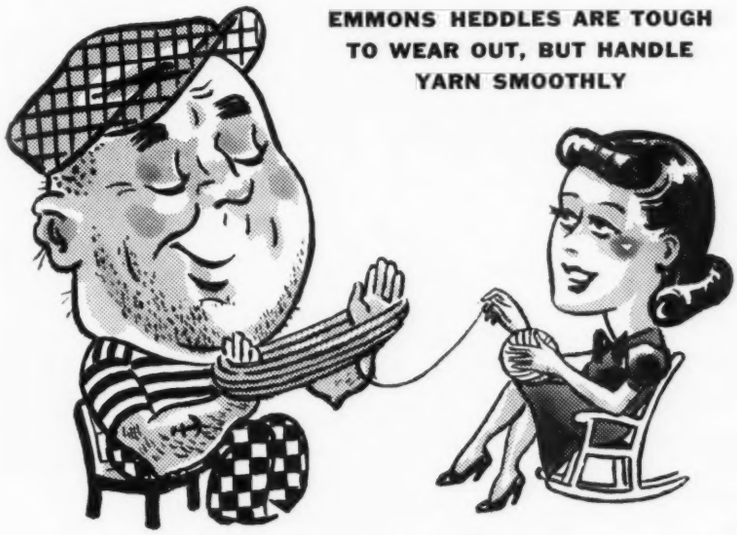
Allen B. Brown, of Rollins Hosiery Mills, Des Moines, Iowa, has resigned to enter military service.

Ralph Yancey who was office manager at Alabama Textile Mills, Haleyville, Ala., before entering the army has been advanced to first sergeant at Camp Hill, Ala.

Winston Sizer, lately of the New York office of Lonsdale Co., has received his commission as lieutenant, junior grade, in the Navy, and is stationed at the Brooklyn Navy Yard.

Treats Yarn Like a Gentleman

EMMONS HEDDLES ARE TOUGH TO WEAR OUT, BUT HANDLE YARN SMOOTHLY



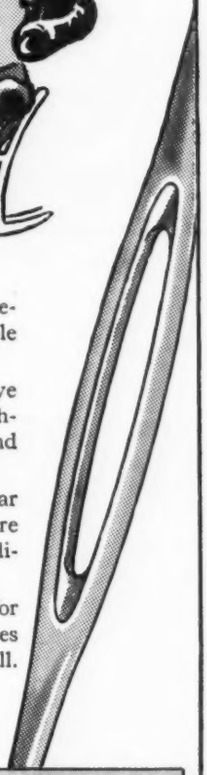
The *toughness* of an Emmons heddle cuts replacement costs. High tensile strength and durable rust-resistant coat keep it on the job longer.

The *smoothness* of an Emmons heddle eye guards production and cloth quality. Extra polishing of streamlined surfaces prevents yarn chafing and warp breaks.

To keep heddles "tough but never rough" year after year, Emmons' manufacturing processes are carefully controlled and sample heddles are periodically examined by a famous testing laboratory.

Write "Emmons" in front of your next order for steel heddles to get the *gentle* strength that saves replacement costs and keeps yarn strong and full.

BE CERTAIN . . . BUY CERTIFIED



YOU CAN *SEE* THE EXTRA SERVICE

An Emmons heddle frame has an extra number of rolled rivets that keep it extra-strong where extra strength is needed; the hand-picked, knotless lumber, with two coats of shellac; and the rust-proof metal that won't catch or discolor yarn. Strong construction reduces vibration, and there's no buckling and binding at the highest speeds.

GIVES YARN PLENTY OF ELBOW ROOM

For fewer loom stops, rejects and seconds, under the stress of continuous operation, you want a reed providing free warp movement, smooth yarn passage, without sacrificing rigidity. Emmons reeds are air-spaced up to 70% if required. So accurate is the spacing and so smooth the dents, that reed marks are avoided, while yarn inequalities cause no trouble.

"Inspected well before shipping" — by an Emmons inspector — is what this seal means on every shipment to you.

Be Certain . . . Buy Certified

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LOOM HARNESS COMPANY
Lawrence, Mass. Charlotte, N. C.

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Lawrence, Massachusetts . . . . Charlotte, North Carolina

Lawrence, Mass. and Charlotte, N. C. Products stocked in Charlotte and Lawrence. Reeds manufactured at both plants. Branch offices: Clifton Watson, Manager of Southern Sales, George Field, Plant Manager, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2643) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 171 Madison Ave., New York (Tel. Lexington 2-6060) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

Argentina, Buenos Aires, Roberto Zander, 345 Juan Jaures; *Brazil*, Rio de Janeiro, A. Polak, Caixa Postal 362; *Chile*, Valparaiso, W. L. Robinson, Casilla 1570; *Cuba*, Havana, J. M. Perez-Pena, Box 1611; *Mexico*, Mexico, D. F., Leo Lenk, Apartado 533; *Colombia*, Medellin, C. E. Halaby & Co., P. O. Box 139.

See latest TEXTILE WORLD YEARBOOK for details on all Emmons Products

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is rationed. If you are a user of glycerin as a hygroscopic agent, you should try our new

CORPOLIN

which is almost twice as effective as glycerin. It is a heavy, colorless and odorless liquid, non-volatile and non-inflammable. It is

AVAILABLE

without preference rating. Makes gums swell, exerts smoothing effect on starch paste, prevents gelatine and glue from gelatinizing.

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Testing Safeguards War Production

***Scott Testers are going 100% into war production plants, and are helping to speed output and safeguard quality in vital textile products. From parachute textiles to uniform yarns, the 57 models of Scott Testers are serving every need for tensile, hysteresis, burst, crepeage, flexing, adhesion, etc.**

SCOTT TESTERS

* *Registered Trademark*

HENRY L. SCOTT CO. 95 Blackstone St. Providence, R. I.

Obituary

Paul B. Seydel, 58, partner of Seydel-Woolley & Co., Atlanta, Ga., manufacturers of textile chemicals, died in an Atlanta hospital, Oct. 20, following an operation. Mr. Seydel was born in Brussels, Belgium, and after receiving a science degree at the University of Brussels, he came to this country and established his citizenship. He was well-known both here and abroad as a chemist and manufacturer. With his brother Herman, he founded the Atlanta Compound Co., which later removed to Jersey City, N. J., where the style of the firm was changed to Seydel Mfg. Co. Later a branch was opened in Nitro, W. Va., and the firm became the Seydel Chemical Co. Mr. Seydel spent some time at both places. In 1923 he returned to Atlanta and with Vassar Woolley, Sr., organized the partnership, Seydel-Woolley & Co. During and immediately after the first World War, Mr. Seydel was active in developing a number of chemical processes which were new in America.

Paul B. Seydel

Jesse H. Metcalf, 81, president of Wanskuck Co., Providence, R. I., and former United States Senator from Rhode Island, died in Providence, Oct. 9. He was a native of Providence, but educated in England to take over the responsibilities of the wool-textile business of his family founded by his grandfather. In 1885 he became mill agent for the Wanskuck Co., functioning in that capacity until 1913 when he became president of the company. With his brother he organized the selling agency of Metcalf Bros. & Co. in 1903 to take over the distribution of Wanskuck products. Mr. Metcalf was also president of the Manville Co. and on the board of directors of numerous industrial, insurance and welfare organizations.

John H. Love, 76, long associated with the textile industry through the firm of Graupner, Love & Lamprecht, until his retirement in 1927, died in Great Neck, L. I., Oct. 11. Mr. Love was treasurer of the Merchants Association of New York for fourteen consecutive years until his resignation in 1933. He was prominently connected with many relief and philanthropic organizations.

Isaac Pullen Keeler, 65, co-founder and treasurer of Greenville (R.I.) Finishing Co., died last month. He was also a member of the old converting firm of Tilton & Keeler which was liquidated in 1932.

John W. Manley, 69, chairman of the board of Sayles Finishing Plants, Inc., Saylesville, R. I., died Sept. 27 in Providence. He had an experience of nearly 50 years in the textile industry and resigned as president of the Sayles organization in 1940. He was first vice-president of the National Association of Finishers of Textile Fabrics. He started his textile career with the old dry goods commission firm of Joy, Langdon & Co., and joined the Sayles organization in 1906.

John E. Bromley, Sr., 68, president of John Bromley & Sons, Philadelphia, died Oct. 26. He entered his family's rug and carpet business in 1897, was elected a director in 1916, and was named president in 1918.

Stanley Bourne, 66, deputy chairman of Courtaulds, Ltd., London, England, and chairman of S. Bourne & Co., Ltd., and a director of the Nottingham Mfg. Co., died in Nottingham last month. He had been connected with the rayon industry, as well as the cotton industry, in England for many years, having been made a director of Courtaulds in the year 1920.

Arthur J. Bassett, 74, a director and formerly president of Johnson & Bassett, Inc., Worcester, Mass., died as a result of injuries when struck by an automobile on Oct. 8. He was a concert pianist, prominently connected with the

LUPOSEC C.U.

FOR WATERPROOFING OF ALL MILITARY FABRICS

LUPOSEC C. U. is the adaptation for military purposes of LUPOSEC, Jacques Wolf's well-known *one-bath* repellent. LUPOSEC C. U. combines all the manifold advantages of LUPOSEC, and meets government specifications for waterproofing and mildewproofing of military fabrics. Whether your job is on work clothes, summer dress uniforms, shelter tents, or sleeping bags, LUPOSEC C. U. gives high-efficiency, low-cost, water-repellent finish. LUPOSEC C. U. requires no special equipment; may be applied in either a continuous or a batch type machine.

LUPOSEC C. U. is stable and may be mixed with other finishing compounds such as gelatines, gums, starches, dextrines. It works with equal effectiveness on cotton, wool, silk, cellulose acetates, etc.

LUPOSEC I. N. is a companion-product to LUPOSEC C. U., adjusted to meet government specifications for Army Duck. LUPOSEC I. N. is applied in solvent solutions.

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Chemicals PASSAIC, N. J.

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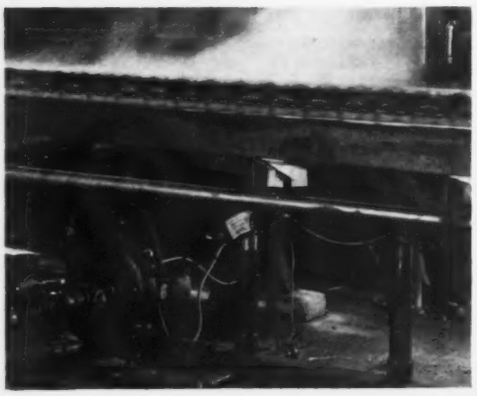
INFRA RED-RAY SPEED DRYING



Investigate the modern Red-Ray method of speed drying—TODAY.

2 to 5 TIMES FASTER

RED-RAY MANUFACTURING CO.

Manufacturers of Infra-Red Ray Combustion Equipment

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TEXTILE FINISHERS

Specializing in Mildew Proofing, Flame Proofing, Water Proofing of Textile Fabrics.

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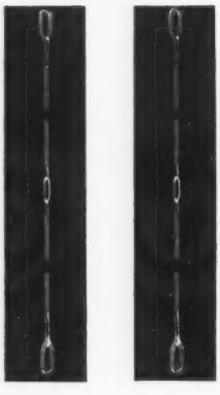
TWIN WIRE HEDDLES

for every type of weaving

Call on Watson-Williams for twin wire heddles. For scores of years, Watson-Williams have maintained a record for quality and precision of heddle manufacture. Send a sample order today.



WATSON-WILLIAMS MANUFACTURING CO.

Millbury, Mass. Leicester, Mass.

SOUTHERN OFFICE: W. F. Daboll, 810 Woodside Bldg., Greenville, S. C. NORTHERN REPRESENTATIVE: G. C. Burbank, 3 Beaconsfield Rd., Worcester, Mass.

NEWS ABOUT MEN

Worcester County Musical Association. He had played at 58 consecutive Worcester Music Festivals and he was leaving his 58th festival when struck by an automobile.

Robert F. Herrick, 76, treasurer and director of the A. J. Tower Co., Boston; chairman of the board, American Felt Co., Boston, and of Pacific Mills, Boston; director Ashworth Bros. (Fall River), Saco-Lowell Shops and Merrimac Hat Co.; and chairman Scott & Williams, Inc., Laconia, N. H., died at Boston on Oct. 13. He was born at Medford, Mass. and was senior member of the law firm of Herrick, Smith, Donald & Farley, Boston, and was a director and trustee of many other business organizations and was active in community welfare work.

Henry P. Stout, 62, head salesman for Eagle & Phenix Mills, with headquarters in New York, died Oct. 7. He began his textile career at the age of 15 with Frederick Vietor & Achelis, New York.

John Huling Finley, 60, president and treasurer of the International Veiling Co., Clifton, N. J., died recently. He was one of the founders of the concern in 1909, and was superintendent of the plant until he became president in 1929.

Dr. Hector Russell Carveth, 69, prominent in the electro-chemical field and former president of the Roessler & Hasslacher Chemical Co., predecessor of the R & H Division of E. I. du Pont de Nemours & Co., died in Niagara Falls, N. Y., recently.

James McCarley Barksdale, 59, Greenville, S. C., for a number of years secretary of Lydia Cotton Mills, Clinton, S. C., and later associated with Norris Brothers, Greenville, in the textile supply business, died Oct. 16.

Dudley Richard Luttrell, 81, retired textile executive, died at his home in Jacksonville, Ala., recently. He was affiliated with the Southern Mills Corp., Oxford, Ala. He was later connected with the Linen Thread Co., Anniston, until retiring several years ago.

Wesley George Dougall, 50, manager of Columbia Mills, Inc., Dallas, Tex., died recently.

W. R. Thomason, superintendent of Palmetto (Ga.) Cotton Mills, died Sept. 28.

David Gessner, Jr., assistant treasurer of Gessner Mfg. Co., Worcester, Mass., and son of the president and founder of the company, died Oct. 15.

George H. Eypper, 73, who retired as vice-president of Deering Milliken & Co., New York, two years ago, died Nov. 5. He had been with the company 51 years, specializing in gray goods and becoming a partner in 1916.

Edwin V. Livesey, 72, former president of Manhasset Mfg. Co., Putnam, Conn., died last month.

W. I. Chase, 66, treasurer of George C. Moore Wool Scouring Co., North Chelmsford, Mass., died Oct. 15.

Alton K. Bales, 53, executive vice-president of Bales Hosiery Co., High Point, N. C., died Oct. 12, in New York, where he was visiting his son, from injuries received two days before when struck by an automobile.

Carl Nelson Hand, 50, chemical engineer and retired plant manager of the Rubber Service department of Monsanto Chemical Co., died Sept. 18 at Charleston, W. Va., while en route from Ohio to his home in Miami, Florida.

R. Odell Lindsay, Sr., 61, president of Guilford Hosiery Mills and member of the board of Adams-Millis Corp. and Highland Cotton Mills, died recently at his home in High Point, N. C.

J. W. Chesnutt, 73, pioneer children's hosiery manufacturer of Tennessee, is dead after a lengthy illness. He was president for many years of the former Englewood Mfg. Co.

Edward W. P. Smith, 56, consulting engineer for the Lincoln Electric Co., Cleveland, Ohio, and an authority on arc welding, died suddenly Sept. 19 on a train from Indianapolis to Cleveland.

Arthur C. Kletzsch, 71, former president and secretary of the old National Knitting Co., Milwaukee, Wis., died in that city recently.

William H. Grigg, 74, for the last 16 years receptionist for Southeastern Cottons, Inc., and its predecessor Hunter Mfg. & Commission Co., New York, died at his home in Westfield, N. J., recently. He had been for 34 years with the former H. B. Claflin Co.

Frank Pope, 67, retired manager and director of Bear Brand Hosiery Co., Chicago, Ill., died Oct. 4.

Richard I. Hunt, 57, of Workman & Hunt, Inc., New York, died Oct. 8. He had been in the textile field for many years, starting with the old H. B. Claflin Co., later being associated with Lawrence & Co. and in 1936 founding the firm of Workman & Hunt.

into the cauldron of war...

Pound by pound, ton by ton, carload by carload, America's scrap is coming in.

It can't come in too fast.

For scrap is the stuff of which the materials of war are made. The cheapest stuff and, for many uses, the best.

Soda ash is used to remove sulphur and other impurities from molten iron. It makes possible the production of sound, durable iron products even though increased percentages of scrap are used. It also permits the use of lower grade scrap.

Michigan Alkali Soda Ash, along with many other Michigan Alkali Products, is going to war in many ways, for many industries.

Let's all get in the scrap, and win!

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MICHIGAN ALKALI COMPANY

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SODA ASH • CAUSTIC SODA • CHLORINE • BICARBONATE OF SODA • CALCIUM CARBONATE • CALCIUM CHLORIDE • DRY ICE

Lots of people sat here . . . .

MANY textile manufacturers were "on the fence". BUT many of them came right off when they discovered the uniformity, cleanliness, consistent high quality of Corn Products Sales Company starches and gums. Many successful textile manufacturers use the services of Corn Products technicians who are always glad to help the manufacturer with WARP SIZING, FINISHING or other textile problems.

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Textile Offices: Greenville, S. C. • Greensboro, N. C. • Atlanta, Ga.
Spartanburg, S. C. • Birmingham, Ala. • Boston, Mass.

TEXTILE MILL NEWS

Cotton Mill News

Avondale Mills, Sylacauga, Ala., report net profit for the fiscal year ended July 31, 1942, after taxes and contingencies of $1,378,362 on net sales of $33,798,880. This compares with net profit of $956,513 in previous fiscal year on net sales of $18,607,385.

Brandon Corp., Greenville, S. C., reports net operating profit for fiscal year ended Aug. 31 of $739,444, with gross operating profit for same period of $2,879,756.

California Cotton Mills Co., Uniontown, Ala., has begun one-story addition to local New Canebrake Cotton Mills, for which general contract was awarded to Cooper Bros., Selma, Ala. No estimate of cost has been announced.

Carolina Insulating Yarn Co., Winston-Salem, N. C., was established in 1938 and incorporated in 1940. That company was incorrectly referred to in these columns last month as "newly organized." It is not "a unit of the Carolina Yarn Co.," although the two companies have a number of officers in common.

Columbia Mfg. Co., Selma, Ala., has rejected bids recently received for proposed one-story addition to cotton mill at Uniontown, Ala., and project, it is said, will be held in temporary abeyance. Robert & Co., Atlanta, Ga., are architects and engineers.

Convenience, Inc., Greenville, S. C., has bought from Martel Mills its Red Bank plant, at Lexington, S. C. Convenience, Inc., manufactures surgical dressings and bandages for the Army. The Lexington plant will manufacture gauze fabric. It consists of about 15,000 spindles and 400 looms. C. C. Rush, who has been superintendent of the Red Bank plant, will continue in that capacity. Convenience, Inc., has also purchased the two buildings occupied by it under lease in Greenville.

Gaffney (S.C.) Mfg. Co. has awarded contract for repairs and maintenance work at the plant.

Grace Cotton Mills, Inc., Rutherfordton, N. C., has awarded a contract to Fiske-Carter Construction Co., Spartanburg, S. C., for extensive improvements to its plant. The Rutherfordton plant is heavily engaged in war production.

Native Laces & Textiles, Inc., New York, is the new name under which Solomon & Birnbaum, Inc., are operating. Their new offices are at 261 Fifth Ave. where they represent lace mills located at Middletown, Conn.; Hightstown, N. J., and Bronx, N. Y.

Pacolet (S.C.) Mfg. Co., has awarded contract to Fiske-Carter Construction Co., Spartanburg, S. C., for repairs and maintenance work.

Pierce Bros., Ltd., New Bedford, Mass.—All the stock interest in this firm owned by the Pierce family has been bought by Frederick H. McDevitt, for the last two years its general manager, and previously for many years manufacturing and selling agent of Soule Mill. Mr. McDevitt has been elected president and treasurer of Pierce, which employs between 600 and 700.

Pisgah Mills, Brevard, N. C., have installed six additional carding machines and increased production of thread for Army and Navy uses about 20%. Of the company's output about 25% is used for war purposes.

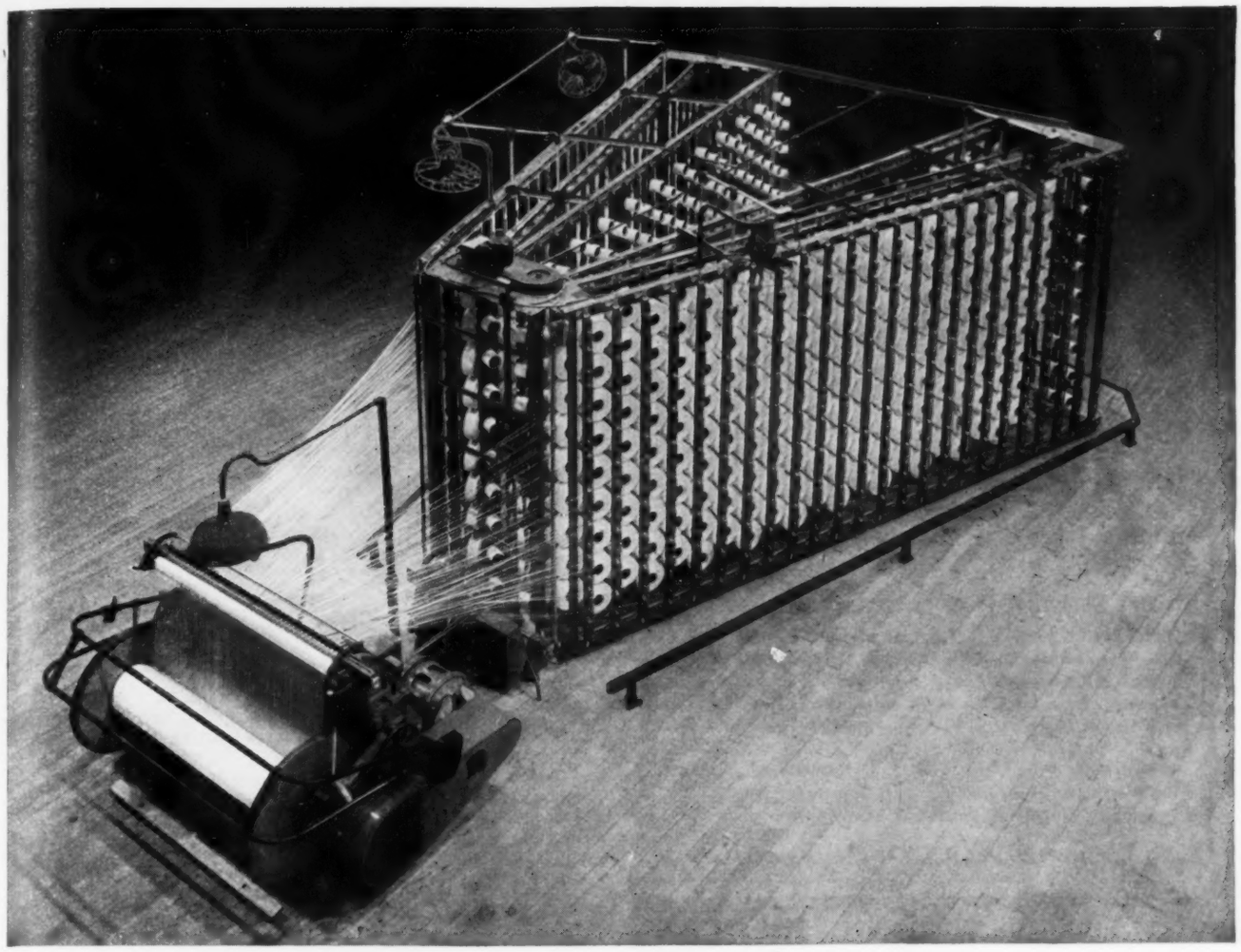
Riverside & Dan River Cotton Mills, Danville, Va., are installing about 330 36-in. looms, to replace 32-in. looms. The latter as removed are being added to the scrap metal contribution of the mills.

Royal Yarn Co's plant at Pawtucket, R. I., was damaged by fire Oct. 11, including loss of $100,000 worth of yarn. The yarn company occupied a 3-story brick building which was gutted. Adjacent plants were also damaged. The buildings were all previously the property of U. S. Finishing Co.

Southern Cotton Co., New York, has leased the Aponaug Mfg. Co.'s cotton mill owned by J. W. Sanders estate at Meridian, Miss., for the period of the war. C. K. Kent, mill superintendent, is retained and same goods will be produced.

United Merchants & Mfrs, Inc., New York, reports net profit, after all charges, for the fiscal year ended June 30, 1942, of $3,787,902, compared with similar net profit for previous fiscal year of $2,623,132.

Ware Shoals (S.C.) Mfg. Co. and **Trion (Ga.) Co.** have made a joint purchase of



Better Beams—at Half a Mile a Minute!

THE Barber-Colman Super-Speed warper winds yarn on the beam firmly and uniformly at the rate of 900 yards a minute, which is 30.7 miles per hour — but that's only *part* of the story. Warping, of itself, does not *add* anything to the yarn, either in twist or condition but, unless it is done right, it can seriously *reduce* the yarn's natural elasticity. Because the warping adds nothing, but only puts the yarn on a proper beam for slashing or weaving, it must also be done as *economically* as possible. The Barber-Colman Super-Speed Warper meets these conditions. Elasticity of the yarn is preserved to the highest possible degree, because it is subject only to air friction. The high operating speed means high production per operator and per machine. In addition, the special creel with traverseable banks of cheese holders helps reduce change time, and a special comb and drop wires reduce creeling-in time. These and various other mechanical features all combine to insure maximum production with minimum effort.

For Example . . .

In a prominent coarse goods mill, where Barber-Colman Spoolers and Warpers are in use, the following production is obtained:

Count	9.5s
Ends on Beam	292
Yardage on Beam	18,000 yds.
Net Wgt. of Full Beam,	659 lbs.
Beams per Warper per 24-hour Day	29

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

RYERSON CERTIFIED STEELS

Prompt Shipment from 10 Strategically-Located Steel-Service Plants... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Detroit, Buffalo, Cincinnati, Cleveland, Boston, Philadelphia, Jersey City.

Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

"YOU CAN COUNT ON WAK COUNTERS"

They are
RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write—Phone—Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

the selling agency, the Riegel Textile Corp., New York, which has represented them for some years. Personnel, policies and name remain unchanged.

Wool Mill News

Ankerum Mfg. Co., 1509 Wood St., Philadelphia, Pa., manufacturer of rugs and paddings, was razed by fire on Sept. 27, the three story building with its contents, being destroyed.

American Felt Co., Glenville, Conn., is continuing its building program (previously reported), and has awarded another contract to Mertz Co., Port Chester, N. Y., for one-story addition, about 22 x 30 ft., to mill at Glenville. Work is being placed under way. Another award has been made to Brien Building Co., Inc., Woonsocket, R. I., for one-story addition to company mill at Franklin, Mass., about 20 x 30 ft., for office service.

Charlottesville (Va.) Woolen Mills suffered flood damage in mid-October in the rise of the Rapidan river. The first two floors of the mill were affected.

Collins & Aikman Corp., Roxboro, N. C., has converted its entire local mill, comprising 224 looms, previously on pile fabrics, for production of tent duck and serge for Army and Navy service, and plant is now running on a capacity basis on such materials.

Firth Carpet Co., Firthcliffe, N. Y., is continuing its mill conversion program for manufacture of duck, blankets, webbing, etc., for war service, including rebuilding of looms and accessory equipment. A large part of mill output is now given over to such materials.

C. H. Masland & Sons, Inc., Carlisle, Pa., have converted their entire plant to manufacture of duck, tarpaulin material and allied specialties for Army and Navy service. Mills are now running on a 100% capacity on such output. Company is giving employment to about twice the number of workers as compared with early in 1942.

Monroe (Mich.) Woolen Mill has taken out a permit for one-story addition and will erect at once. No estimate of cost announced.

Oriental Rug Weaving Co., 1416 Vine St., Philadelphia, Pa., has arranged for lease of a floor in building at 1423-25 Vine St., and will use for plant.

Rayon & Silk Mill News

Blue Mountain Textile Co., Wind Gap, Pa., is constructing a one-story concrete block addition to its plant, which will cost $7,500.

Dominion Spinners, Ltd., St. Johns, Quebec, recently organized, plan new one-story mill, about 120x175 ft., on St. Joseph Blvd., reported to cost over $75,000, with equipment. Erection bids will be asked soon. J. E. Benoit, St. Johns, is architect.

Industrial Rayon Corp., Cleveland, Ohio, is said to be completing arrangements with WPB for expansion in mill at Painesville, Ohio, including conversion of about 25% of equipment and facilities for production of high tenacity rayon yarn for tires. Program will provide about 10,000,000 lbs. per annum of this yarn, all of which will be used by Government.

Kanmake Mills, Kulpmont, Pa., has given contract for erecting $50,000 brick addition to Wm. F. Sutter of Nescopeck, Pa.

Luray (Va.) Textile Corp. has begun construction of one-story addition, about 50x150 ft., for which general contract recently was let to D. B. Coffman, Luray. It will be used as a warehouse, and present mill space utilized for such service will be used for expansion in production. Additional equipment will be installed. Entire project is reported to cost over $40,000 with the necessary equipment.

Penn-Hadley Mills—The idle Dunlop silk mill in Blakely, Pa., purchased some months ago by the Penn-Hadley Mills, has undergone extensive alterations and now is employing 52. The mill, which had been idle for ten years, will eventually employ several hundred persons in its manufacturing operations, it is said.

Rockledge Mills Corp., Paterson, N. J., has sold its assets at auction in a receiver's action for a figure totaling $9,978.

Victoria (Va.) Silk Mills have been leased by Randolph Paper Box Co., of Richmond, Va., for the manufacture and treatment of paper boxes for use in the medical department of the Army.

Knitting Mill News

Amazon Knitting Co., Muskegon, Mich., proposes to discontinue operations at plant, it is announced, as soon as present orders on books are completed. It is stated further

EVER IS IT "TOO EARLY" TO THINK ABOUT THE FUTURE OF YOUR MILL?

It is not too early, even now, to be thinking about the influence of wartime hosiery trends on the future of your knitting mill. For war greatly accelerates change—in the technique of production and merchandising . . . in the attitude of the buying public.

Alert mill management, looking ahead, is keeping an eye on these and other changes for their effect on the hosiery business after the war. For of one thing you may be sure—the industry will *not* return to the place where it left off before the war began. Many of today's trends will carry over into the post-war world . . . to attract a more discriminating public in a buyer's market.

New constructions, styling and merchandising have acquainted consumers with the advantages of different yarns, and the variety of distinctive styles they permit. While in process of development are new, improved yarns with a promising future . . . yarns which in turn will inspire still newer styles, and be widely publicized to a more hosiery-conscious public.

This is why far-sighted management is redirecting its peacetime planning these days. Among the factors that are being seriously considered is the type of knitting equipment that will enable a mill to anticipate the new consumer demands after Victory. You have probably been thinking a good deal about this in terms of your mill's position. We, too, have been giving a lot of thought to hosiery mills' post-war problems. You may be interested in some of our views on the subject. Like to talk them over? Just drop us a line and we'll be glad to call at your convenience.

The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point offices.

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

ESTABLISHED 1865

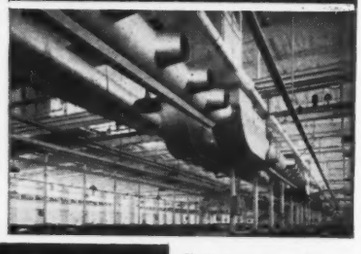
SCOTT & WILLIAMS

INCORPORATED

40 WORTH STREET • NEW YORK, N. Y.

WHITMAN YARNS
WORSTED • COTTON • SPUN RAYON
ARLINGTON MILLS
LAWRENCE, MASS.
•
MONOMAC SPINNING CO.
LAWRENCE, MASS.
•
NONQUITT MILLS
NEW BEDFORD, MASS.
WILLIAM WHITMAN COMPANY, INC.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE

AIR CONDITIONING
HUMIDIFYING
ATOMIZERS
UNIT SYSTEM
CENTRAL STATION
AIR FILTERS
HEATING
COOLING
ENGINEERS—EQUIPMENT FOR THE TEXTILE INDUSTRY



Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.
For 25 years we have been successfully solving the air-conditioning problems of the Textile Industry.

When You Change Your Address . .

It will help us keep your copies of TEXTILE WORLD coming to you each month if you will promptly advise us of any change of address.

A penny postcard will do—but please indicate your *old* and *new* address, and any new company connection or position.

TEXTILE WORLD
330 West 42 Street New York, N. Y.

that such orders will keep the plant active for several months to come. The business was started in Valparaiso, Ind., soon after the Civil War and moved to Muskegon in 1895. George A. Hume, Jr., is president.

Bilt-Well Knit Fabrics, Inc., New York, N. Y., recently chartered, have leased space in building at 18 West 20th St., for knitting mill, and will begin operations at once.

Campe Corp., New York, reports net profit for fiscal year ended July 31, 1942, of $192,819 after depreciation and taxes compared with similar net of $55,437 for previous fiscal year.

C. Walker Jones Co., Philadelphia, maker of knitted specialties, has bought the building at 6135 Lambert St., occupied by Eli Titherington & Sons, women's wear, who are liquidating their business.

Philmont, N. Y.—Property of High Rock Knitting Co., including mill and equipment, has been placed on market. The plant totals about 200,000 sq.ft. of floor space.

Thomas Warren Knitting Co., Ltd., Toronto, Canada, has discontinued operations.

Tip Top Hosiery Mill, Asheboro, N. C., of which Arthur Ross, Sr., is principal owner, on Oct. 26 was leased by Nee C. English and J. C. Lloyd, who will continue to operate the business under the same name. Employing approximately 120 persons, the Tip Top Hosiery Mill is now producing men's hosiery for the Government. The lessors are associated with the Ragan Knitting Mills, Thomasville, N. C.

Processing Plant News

Applikon, Inc., Paterson, N. J., care of Frank J. Davies, 152 Market St., Paterson, attorney and representative, has been organized with capital of $20,000, to operate a local dyeing and printing plant.

Boston Textile Finishing Co., Weymouth, Mass., is completing fire-damage repairs to its plant at 11 Cottage Street. Lester L. Fulton, Weymouth, has contract.

Sanco Piece Dye Works, Inc., Garnerville, N. Y., have taken over former mill of Standard Silk Division of A. D. Juilliard & Co., Phillipsburg, N. J. (as previously reported), and will improve and equip at once for new branch mill for finishing of acetate and viscose rayon fabrics. Machinery and equipment, a considerable allotment from Garnerville plant, will be installed to provide for about 400 workers.

Sayles Bleacheries & Glenlyon Dye Works, Saylesville, R. I., have work under way on interior improvements and alterations in mill, for which general contract recently was let to Henry M. Soule Co., Pawtucket.

Textile Converting Co. is the firm name under which Major Rubin has obtained a certificate to conduct business at 819 Santee street, Los Angeles, Calif.

Warwick Print Works, Bound Brook, N. J., is in hands of John C. Lewis, of Paterson, as receiver.

Miscellaneous Mill News

Collyer Insulated Wire Co., Pawtucket, R. I., braided wire and cable, has begun one-story addition to boiler house.

Cordanic Corp., Easthampton, Mass., has awarded contract to Walter H. Barker, Inc., Taunton, for a plant addition. The engineering firm of F. P. Sheldon & Sons, Providence, R. I., drew the plans.

Hesky Flax Products, Ltd., large Canadian independent grower, has purchased the Meredith (N.H.) Linen Mills. Over $50,000 has been expended in alterations, repairs and improvements, and the mill will specialize in the manufacture of toweling, luncheon cloths, and eventually damask table cloths, using tow while the long fiber flax is restricted to Government use. T. L. McCarthy, who has been associated with the Meredith mill during its 30 years of existence, will continue as production manager. Raymond Morrill is now assistant manager, and the general manager for the Hesky interests is Eric Dent. Adolph Berli is adviser.

Penacook (N.H.) Fiber Mill has awarded general contract to Foster & Bamford, Inc., Concord, to rebuild its mill on North Main street. Work includes a new storage shed and rebuilding plant from third story up, also new brick walls.

Twin City Textile Mills, St. Paul, Minn., have made improvements in one-story building at 41-73 East Fairfield Ave., to be used for warehouse.

West Virigina Bedding Co., Parkersburg, W. Va., manufacturer of mattresses, etc., is considering rebuilding of mill recently destroyed by fire, with loss reported over $40,000.

YOUR TRUMP CARD...

ACE GUM

For warp sizing cotton yarns for Army poplins, herringbones and shirtings, and other fabrics.

Stein-Hall Ace Gum . .

- ♠ *Assures high weaving efficiency in lower humidities.*
- ♠ *Made of domestic materials . . .* not affected by scarcity of ingredients.
- ♠ Cooks quickly . . . *important in plants on full time war work where every minute counts.*

Stein-Hall ACE GUM offers you these advantages . . . plus economy. Ask for a trial lot.

Ace Gum is only one of our line of high quality special textile sizing, finishing and printing starches and gums. Our research and field technical staffs are ready to help you solve your problems . . . *for the duration and afterwards.*

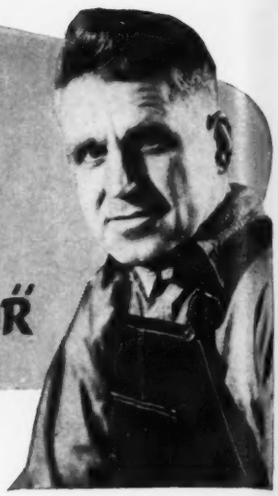
STEIN, HALL MFG., CO. ★ STEIN, HALL & CO., INC. ★ STEIN, HALL, LTD.

2841 South Ashland Ave., Chicago 285 Madison Ave., New York City 250 Van Horne St., Toronto, Can.
1011 Johnston Building, Charlotte, N. C.

LABORATORIES AT: NEW YORK · CHICAGO · CHARLOTTE · PROVIDENCE · LONG ISLAND CITY, N. Y.

76 YEARS OF STARCH SERVICE ★ A TEXTILE STARCH FOR EVERY TEXTILE PURPOSE

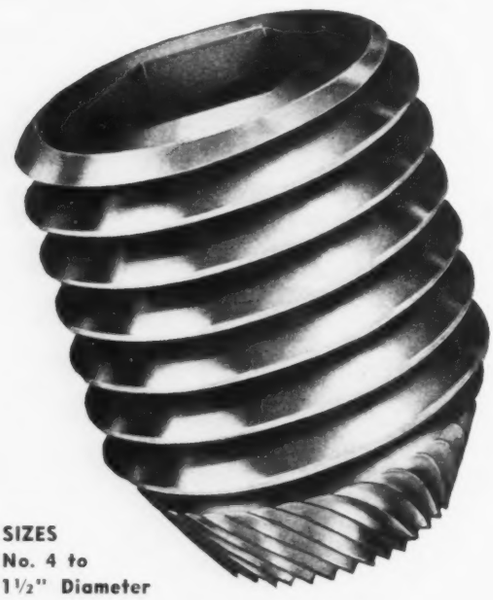
MACHINERY MAINTENANCE IS A CINCH. NOW WE'RE USING THE SET SCREWS WITH "THE THIRD FACTOR"



UNBRAKO

Reg. U. S. Pat. Off.

SELF-LOCKING HOLLOW SET SCREWS
with the KNURLED POINTS



SIZES
No. 4 to
1½" Diameter

Pat'd. and Patents Pending

Knurling of Socket Screws originated with "UNBRAKO" years ago.

. . . and here are the 3 FACTORS

First . . . **Unbelievable Strength**

Second . . . **Accuracy**

Third . . . **They won't shake Loose!**

The reason for the "Third Factor" is that the *knurled points* make "UNBRAKO" Set Screws *self-locking*. As soon as these screws are set up as is customary, the *knurled points* "dig in" and hold the screws tight regardless of vibration. Yet they can be backed out and used again and again. Don't run the risk of having set screws work loose and cause trouble when you can prevent it by standardizing on "UNBRAKO" Self-Lockers. Get "UNBRAKO" protection now.

UNBRAKO WELT-BAR SCREWS

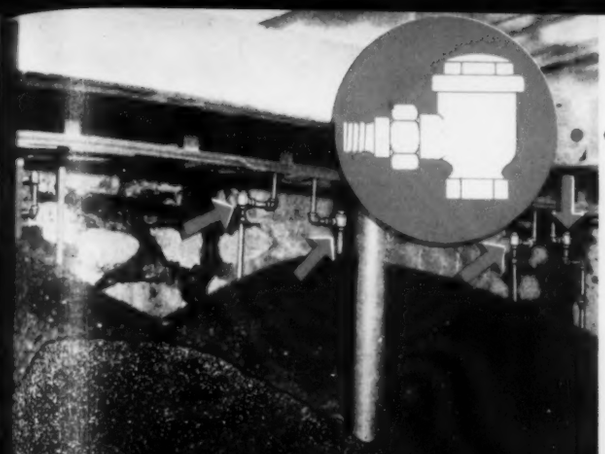
Uniformly strong and accurate, "UNBRAKO" Welt Bar Screws are giving extra satisfaction in hundreds of mills. Would you like samples?

Write us today for Catalog and complete information, or get in touch with your local mill supply house. The chances are they can supply your needs right from stock.

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 571

BRANCHES—BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO



Sarco Thermostatic Steam traps guarding the coal pile in a large industrial plant.

. . . THE ANSWER TO "What can I do?"

Do you feel "stuck with it" for the duration? Like to shoulder a gun? So would most of us — but you can probably do more to help win the war right where you are.

Suppose every reader of this publication were to reduce fuel and water consumption only 10%. Suppose this reduced slow ups, shut downs, and rejects, and speeded up production only 10%. The result would be a tremendous contribution to victory in this war of production. That's your job and Sarco's job for the duration.

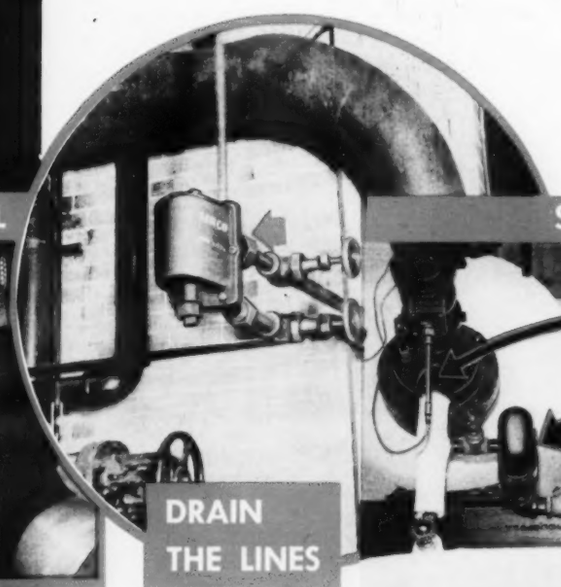
A few suggestions are given on this page. A hundred more are shown in the new Sarco Hook–Up Book with calculation tables and recommendations.

Begin the speed-up and savings now. Our nearest representative is ready to help you.

FUEL
Is one-third of the nation's transportation tonnage

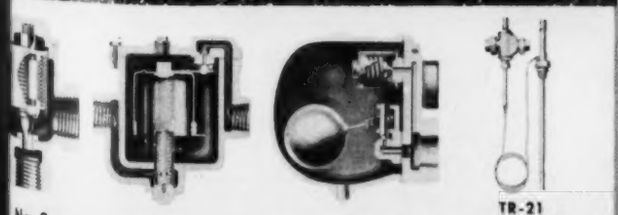
A carload of Sarco steam traps can save as much as 100 carloads of fuel a year

DRAIN EACH COIL



DRAIN THE LINES

SAVE HOT WATER



No. 9 BUCKET — FLOAT-THERMOSTATIC — TR-21 REGULATOR

SARCO Saves Steam

SARCO COMPANY, INC., 475 FIFTH AVENUE, NEW YORK

Represented in Principal Cities

SARCO CANADA, LTD., 85 Richmond Street, West, TORONTO, ONT.

Solving new Problems

WITH SARCO

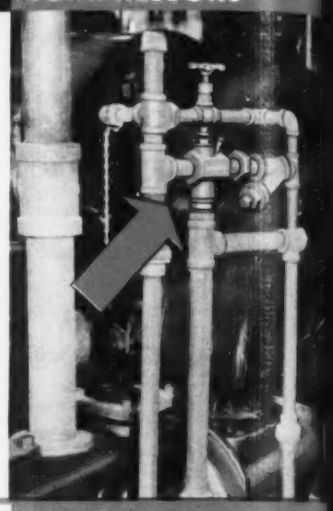
PAPER MILK BOTTLES

SARCO No. 9

Milk delivered in paper containers is now preheated, pasteurized, cooled, bottled in stream-lined machines which take the place of entire old line dairies.

Excello Aircraft's "Pure-Pak" machines, a leader in this field, come equipped with Sarco No. 9 thermostatic steam traps. No. 9 is the ideal condensate drainer for process equipment. Small, easy to install, requires no seat change when pressures change. Retains more heat in the machine than any other type of trap. Catalog 250.

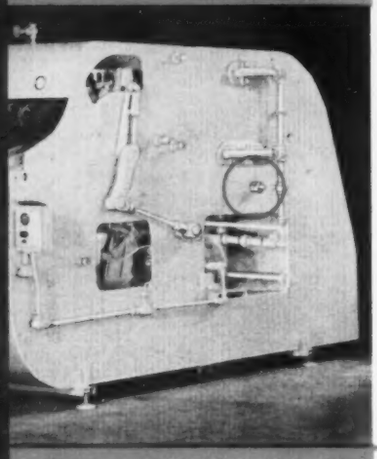
COMPRESSORS



SARCO TYPE TR-40

Compressors — Up to 50% of the cooling water used on air compressor jackets is being saved by the use of this simple temperature control, easy to install. It also saves on lubricating oil while protecting the compressor against overheating. Used also on Diesel engines, stills, condensers, water cooled dies, etc. Catalog No. 700.

FOOD



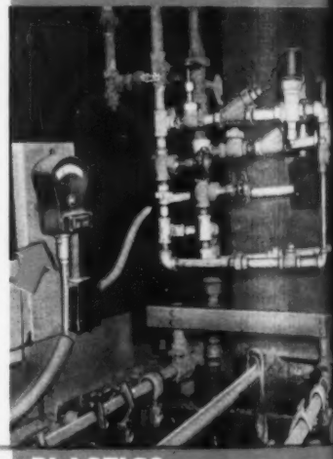
SARCO No. 87S

This leading equipment manufacturer streamlined temperature control on a new low-cost bottle washer by selecting two simple Sarco regulators.

Type 87S heats the rinse water by direct steam injection, maintaining constant temperature at little more than the cost of a silent injector nozzle alone. Catalog 550.

Wash water temperature is held within a degree or two by a low cost Sarco type TR-50 rigid stem, self-contained regulator. Catalog 600.

PLATING



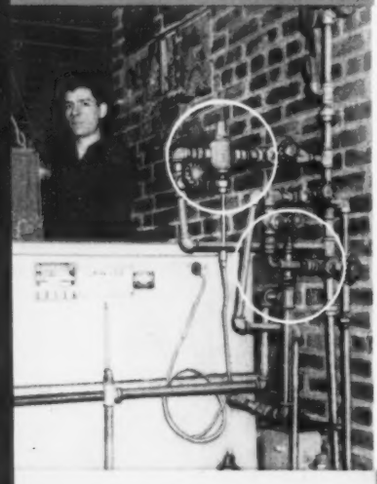
SARCO LSI

Sarco has developed a simple electric control for both heating and cooling of chromium plating solutions.

A single electric thermostat controls two magnetic valves and the maintained temperature is indicated continuously on a thermometer built into the thermostat.

Control is maintained within plus-minus 1°F. at a fraction of the cost of conventional air operated equipment. Catalog No. 1025.

DEGREASING

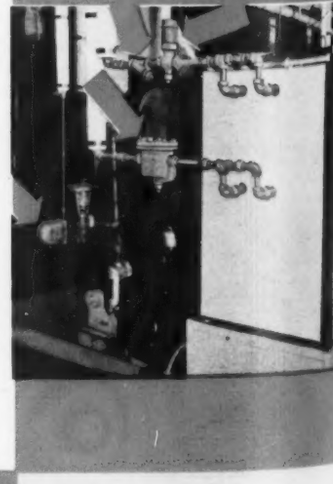


SARCO TYPE VL

Degreasing — Modern metal parts cleaning machines using trichlorethylene vapor, require accurate temperature control of both heating and cooling. Leading manufacturers of degreasers secure the desired result by furnishing as standard equipment simple Sarco self-operated regulators, type VL for heating coils, type TR-40 for the cooling water.

Together these hold a constant vapor line and at the same time save steam and water. Catalog Nos. 600 and 700.

PLASTICS



SARCO OVEN CONTROL

Transcription records for radio programs require accurate temperature control of the steam heated drying ovens.

Sarco solved the problem for this leading manufacturer, with Sarco inverted bucket steam traps on the supply, float-thermostatic traps draining the coils, and the simple type LSS electric valve control. Customer reports: "Works like a charm; temperatures are always the same!"

Catalogs Nos. 350, 450 and 1000.

SARCO

Saves Steam

SARCO COMPANY, INC., 475 FIFTH AVE., NEW YORK

Represented in Principal Cities

SARCO CANADA, LTD., 85 Richmond Street, West, TORONTO, ONTARIO

★ *Producing millions of yards of*

WEBBING FOR WAR

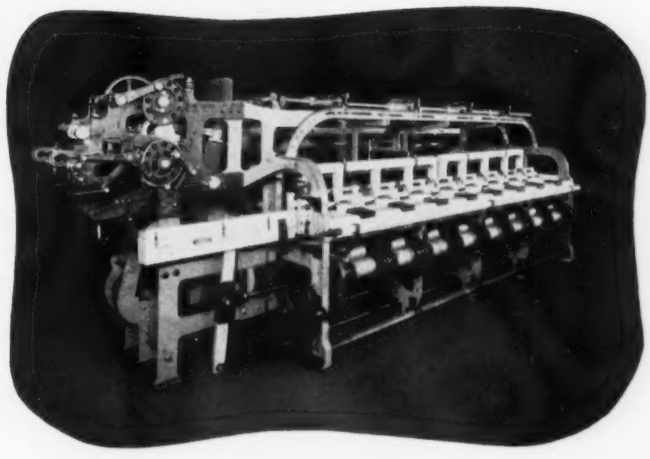
PARACHUTE WEBBING

MACHINE GUN WEBBING

GAS MASK WEBBING

GUN SLING WEBBING

PISTOL BELTING



the FLETCHER "VICTORY" LOOM

especially designed for weaving the webbing requirements of modern war!

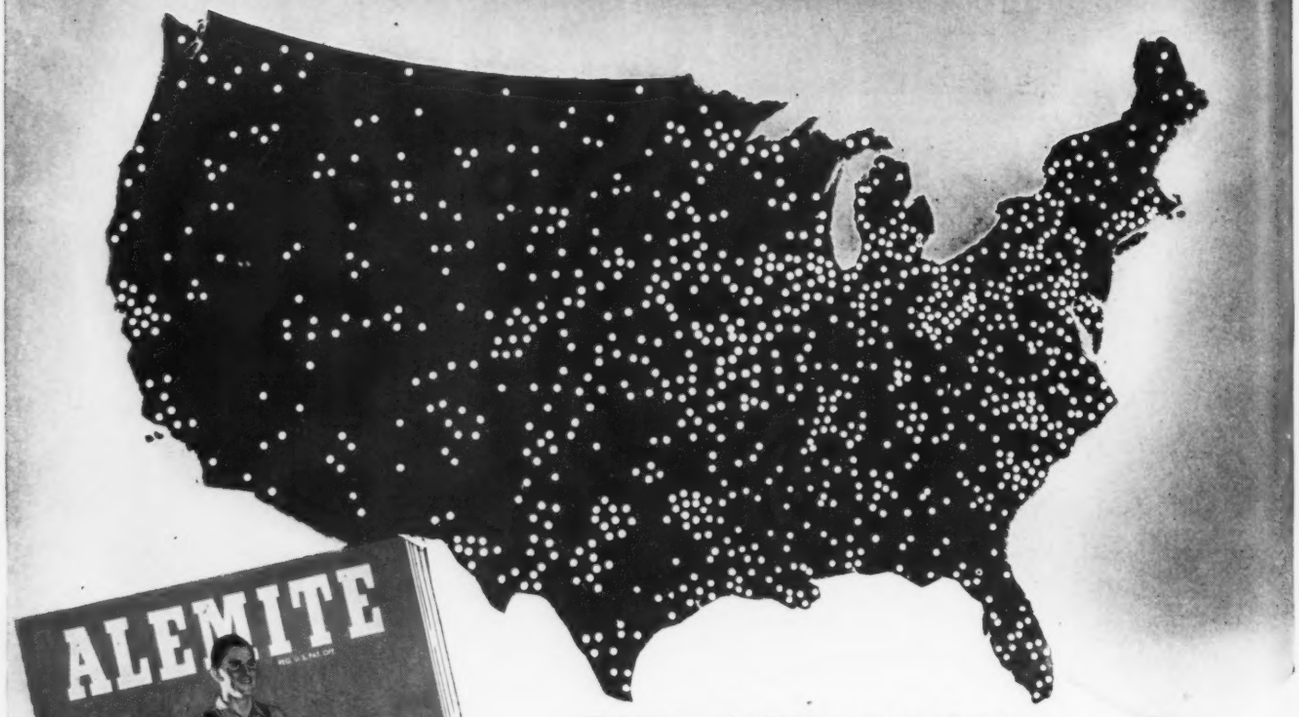
This loom will consistently produce *quality* webbing, in *quantity* . . . will withstand the strain of a 168 hour week . . . is well worth your investigation.

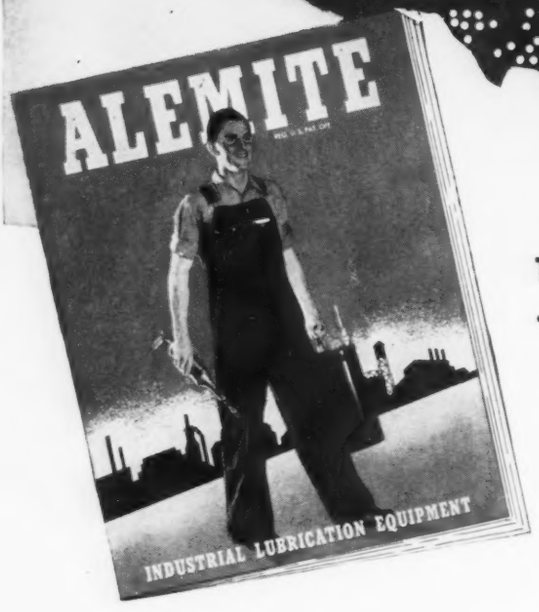
FLETCHER WORKS,

Glenwood Ave. & Second St., Philadelphia, Pa.

★ FOR AMERICA—THROW YOUR SCRAP INTO THE FIGHT!

ALEMITE'S NATION-WIDE SYSTEM OF THOROUGHLY SKILLED SERVICE-JOBBERS MEANS IMMEDIATE ACTION ON SERVICE CALLS!





This profusely illustrated catalog, just off the press, contains 50 pages of detailed information concerning positive, dependable, modern industrial lubrication. It belongs on the desk of every factory superintendent and maintenance executive. Write for your copy today.

THIS NEW BOOK

TELLS ABOUT LATEST ALEMITE EQUIPMENT . . . AVAILABLE ON PRIORITY ORDERS

WHEN factories work around the clock, lubrication equipment works overtime. And because Alemite Lubrication Equipment is machinery, it requires service—just as any other machine does. Today's production demands saddle Alemite Pumps with heavier responsibility than ever before. Service, when needed, is usually needed in a hurry.

That's why Alemite users appreciate the nation-wide system of service jobbers—providing qualified service in every large center of population. No Alemite user is far from a skilled service man. Every Alemite Service Jobber is listed under "Alemite" in the telephone book.

The complete new line of Alemite Industrial Lubrication Equipment is described in detail in a catalog just off the press. This equipment is the last word in modern efficiency.

Another Product of STEWART WARNER

ALEMITE

REG. U.S. PAT. OFF.

Industrial LUBRICATION

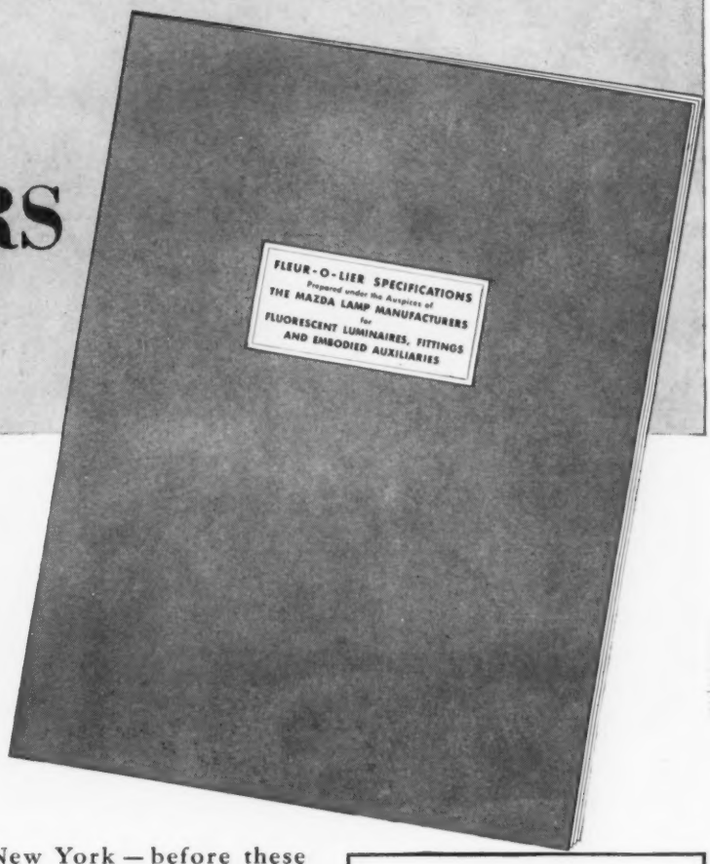
1888 Diversey Parkway, Chicago, Ill. • Belleville, Ontario

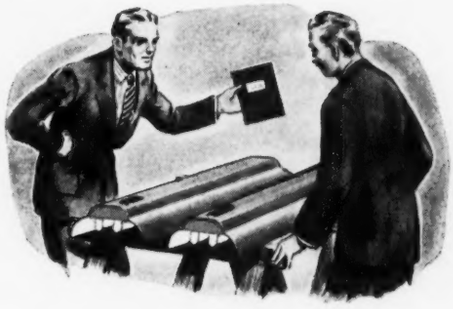
ALEMITE HELPS THE WORLD GO 'ROUND

Ask Anyone In Industry!

Planning war plant lighting? First get these specifications . . .

learn why FLEUR-O-LIERS are right!





1. These manufacturing specifications for Certified FLEUR-O-LIER fixtures have been written to protect those who *specify* and those who use fluorescent lighting. Skilled lighting engineers of the MAZDA Lamp manufacturers put their full knowledge into the setting up of these standards—to assure you of highly satisfactory service from fixtures and efficient performance from lamps.

2. No specifications are more complete. They cover not only reflectors but auxiliaries (ballasts and starters) as well—a full check on electrical, mechanical and lighting performance.

3. This information takes you "behind the scenes." It gives you full details of how fixtures built to these specifications are tested and checked by Electrical Testing Laboratories, Inc., of New York—before these impartial experts issue the right to use the famous FLEUR-O-LIER Certification Label. Over 40 leading fixture manufacturers are already making fixtures to these standards and participation in the program is open to *any* manufacturer who complies with the FLEUR-O-LIER requirements.

4. Plant engineers, architects, purchasing departments can have the full assurance that fixtures bearing the FLEUR-O-LIER label have been *Certified* by Electrical Testing Laboratories as meeting all of these specifications—making unnecessary any further test or check by the user.

★*A request on your business letterhead will bring the actual fixture specifications to you promptly. Write NOW to FLEUR-O-LIER MANUFACTURERS, 2120-11 Keith Bldg., Cleveland, Ohio.*

Covers such important points as:

Efficiency—safety—construction—finish—brightness—flicker correction—listed materials—high power factor—ballasts and starters—temperature rise.

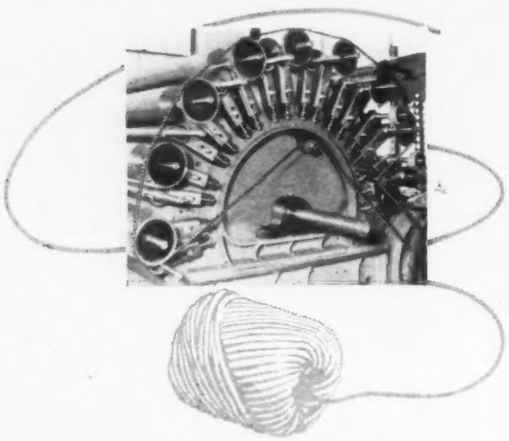
FLEUR-O-LIERS

CERTIFIED FIXTURES FOR FLUORESCENT LIGHTING

Participation in the FLEUR-O-LIER MANUFACTURERS' program is open to any manufacturer who complies with FLEUR-O-LIER requirements

IF this garnett were working for you . . .

How would you drive it to gain these advantages . . .



A *Perfect* maintenance of speed ratios between all functions?

B *Continuous* 98.6% efficiency in the use of power?

C *Quiet,* smooth operation that all mill operators want?

Why use BALDWIN Roller Chain Belts?

● Do you know that only roller chain belts provide perfect maintenance of speed ratios between all functions of textile machines—yet have the ability to absorb shocks and to protect the working parts against overloads?

Do you know that only roller chain belts provide continuous 98.6% efficiency? That they are quiet, clean, smooth running?

You'll find the Baldwin man very helpful in redesigning old drives in your plant or developing new ones to bring the advantages of Baldwin roller chain belts to your mill and to your pocketbook. Baldwin-Duckworth, division of Chain Belt Company, 346 Plainfield Street, Springfield, Mass.

PLEASE NOTE

Baldwin roller chain belts transmit power between shafts with nearly 100% efficiency, yet absorb shocks and stand up under conditions of heat, abrasion and corrosion that seriously impair other power transmission media.

★

POSITIVE! THAT'S BALDWIN ROLLER CHAIN BELTS

There's "FIGHTING PUNCH" in Every POUND of Your SCRAP METAL!

✓

DO IT TODAY!

Turn in your Scrap Metal. Every Pound is needed NOW! The Production of America's Steel Mills must *not* be — "Too Little–Too Late"

Turn it in NOW...when it is so sorely needed to—

"KEEP 'EM ROLLING"
"KEEP 'EM FLYING"
"KEEP 'EM WINNING"

Without your scrap and all that others can supply, the Steel Mills of America cannot operate at VICTORY Capacity!

"Throw your Scrap into the Fight"

Solid stainless scrap is especially needed.

INGERSOLL STEEL & DISC DIVISION
BORG-WARNER CORPORATION

310 South Michigan Avenue Chicago, Illinois
Plants: Chicago, Ill.; New Castle, Ind.; Kalamazoo, Mich.

"A Borg-Warner Product"

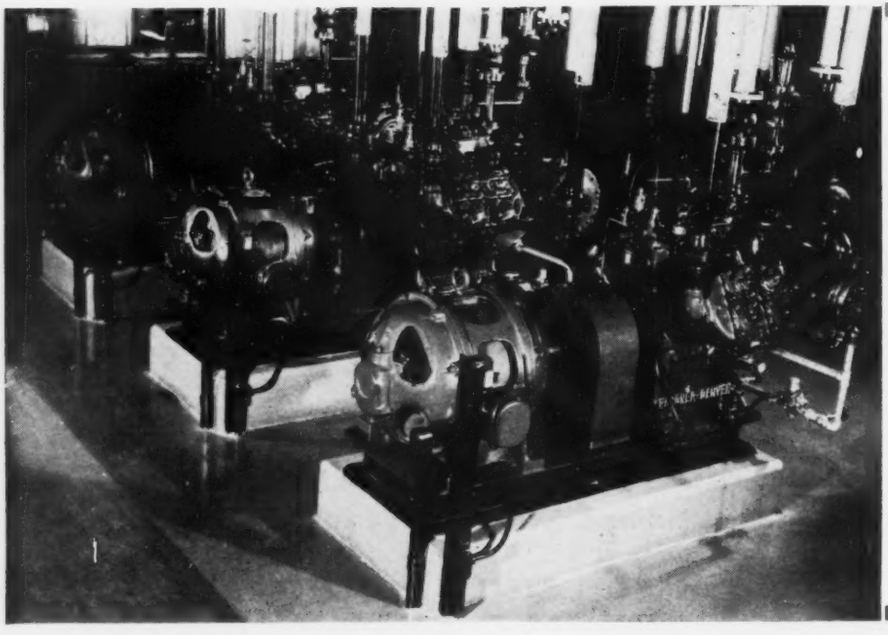
INGACLAD

STAINLESS-CLAD STEEL
AND INGERSOLL SOLID STAINLESS STEEL

WHAT DOES WAR MEAN TO *Your* AIR COMPRESSOR?

War **MEANS HEAVY OPERATING SCHEDULES**

Air compressors in many a busy plant today are called upon to operate at peak capacity throughout triple-shift production days. If there's a Gardner-Denver "WB" Vertical, Two-Stage Air Compressor in your plant, you're finding out it was designed for just that kind of grueling service... This rugged, space-saving unit is built to provide a plentiful air supply at efficiencies comparable to those of much larger compressors. It is fully water-cooled for lubricating oil economy and cooler discharge temperature, even under continuous operating conditions.



• *Saving nearly half the usual floor space. Where minimum foundation and space requirements must be met, Gardner-Denver "WB" Air Compressors are furnished with motor mounted directly on compressor shaft. This compressor, which is built in capacities from 142 to 445 cubic feet displacement per minute, may also be equipped for any standard type of drive.*

War **MEANS CAREFUL ATTENTION TO CARE AND MAINTENANCE**

Today—more than ever before—it is important that you keep your air compressor fit for the rigors of all-out war effort. Here are a few pointers on air compressor maintenance:

1. Keep crankcase filled with high grade engine oil—and change oil every 2 to 4 months.
2. Use only best grade air compressor oil for lubricating compressor cylinders.
3. Clean intake air filter at least once a month.
4. Test safety valves daily to prevent sticking.
5. Periodically inspect compressor valves —clean if necessary.
6. Clean automatic water traps frequently, to make certain they are operating.

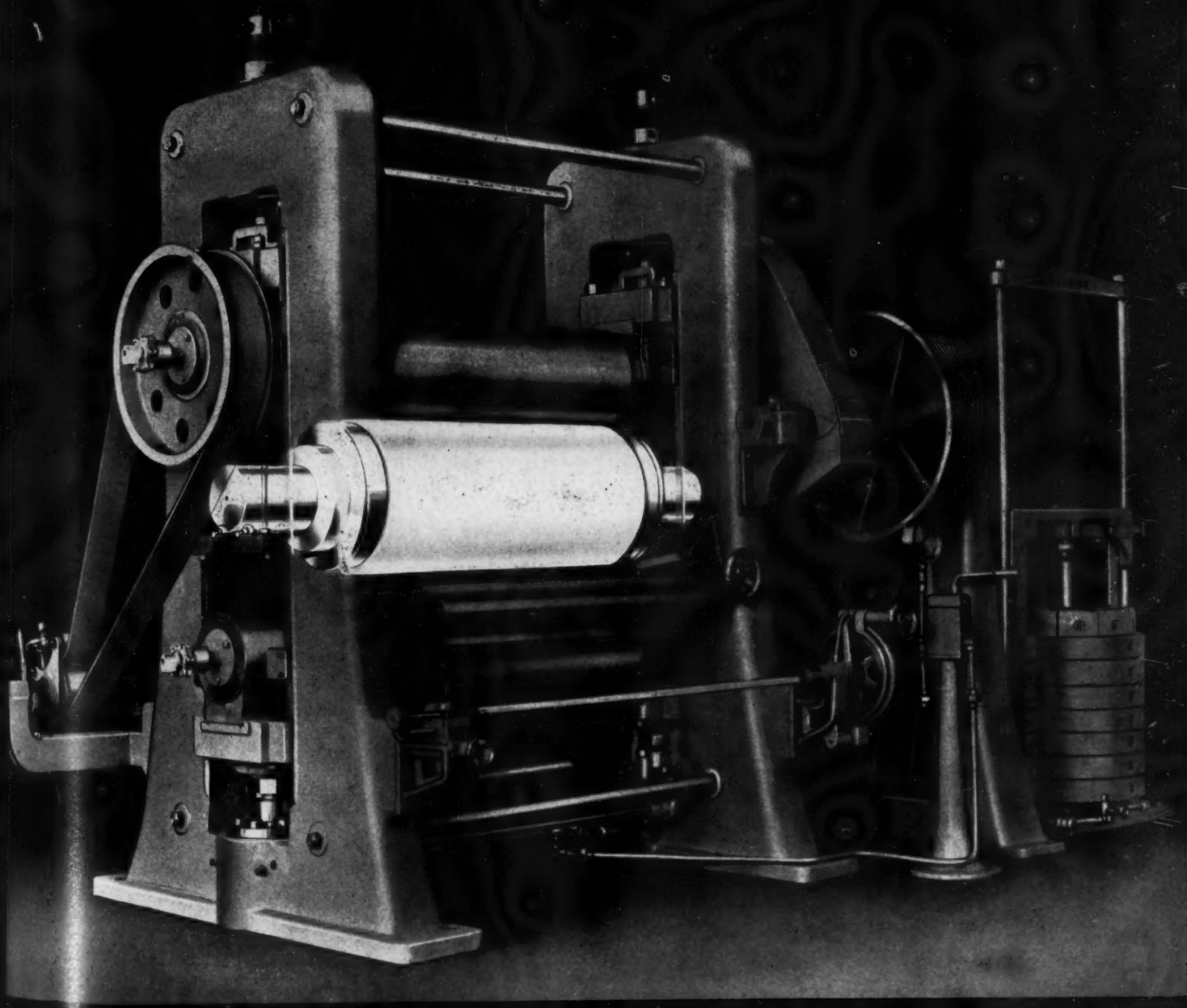
For further information, write Gardner-Denver Company, Quincy, Illinois; Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.

GARDNER-DENVER PRODUCTS HELP SPEED VICTORY

GARDNER-DENVER *Since 1859*

PERKINS ROLLS

IMPROVE THE PERFORMANCE
OF ANY CALENDER



B. F. PERKINS & SON, Inc.

HOLYOKE • MASS.

Call Scully for

NATIONAL EMERGENCY ALLOY STEELS

TO save critical materials such as nickel and chromium, "National Emergency Alloy Steels" have been developed as substitutes for the old style alloy steels. These new alloy steels cover a wide range of properties and were especially designed to meet present conditions. Many of them are actually outperforming the steels previously used.

Our stock of these "National Emergency Alloy Steels" is now coming in. We welcome your inquiries and orders and would be happy to assist you in determining the grades best suited to your needs.

Telephone, wire or write the Scully Warehouse nearest you—see phone and teletype numbers above.

Do you lack steel to complete a rush war job? Is your production in danger of being slowed down or stopped for want of some piece of steel or steel product? Then call the nearest Scully warehouse. Many such calls have kept wheels turning. If we don't have what you need, you can be sure that we'll do everything possible to help you get it.

Our first job, like yours, is to speed war production. Every one of our warehouses is on the job day and night. And although our stocks of steel are not what we wish they were, what we have can be yours in a hurry—subject, of course, to priority restrictions. So try Scully—note our phone and teletype numbers above.

Scully Service

USS

SCULLY STEEL PRODUCTS COMPANY

Distributors of Steel and Steel Products

Warehouses at CHICAGO · NEWARK, N. J. · ST. LOUIS · BOSTON
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UNITED STATES STEEL

INDUSTRIAL SEWING MACHINES
for Every Sewed Article

- PARACHUTES
- TARPAULINS
- MECHANICS SUITS
- BARRACK BAGS
- WOMEN'S WORK UNIFORMS
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- LEGGINGS
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- BARRAGE BALLOONS
- FLAGS
- SEA BAGS
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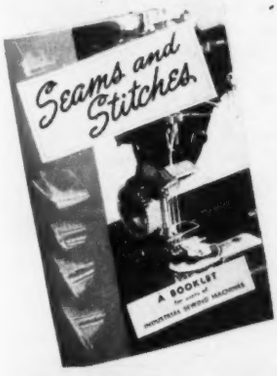
- HAMMOCKS
- GROUND COVERS FOR INFLATING BALLOONS

and hundreds of other articles

EVERY production executive knows the benefits that come from using equipment specially designed to handle a given job: HIGHER PRODUCTION RATES . . . BETTER QUALITY PRODUCT . . . FEWER REJECTIONS . . . LOWER UNIT COSTS.

Union Special can give you these benefits in Industrial Sewing Machines for virtually every sewing need. Or if you need help on any sewing problem or on government specifications on sewed goods consult Union Special engineers. They are among the world's authorities on machines and methods, seams and stitches. Their offices are a clearing house for war production and sewing problems.



"Seams and Stitches"

This new manual fully describes nearly every seam or stitch type you will ever be called upon to produce and describes typical uses for them. Completely illustrated. An authoritative guide for every needle trades plant. Ask for it on your company letterhead.

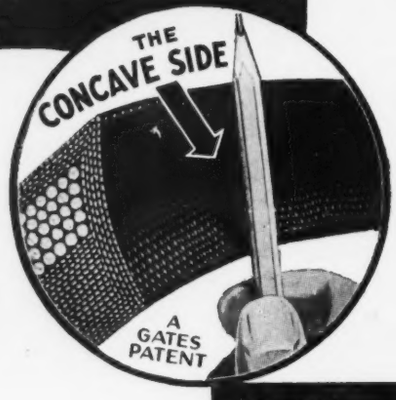
UNION SPECIAL

UNION SPECIAL MACHINE CO.

432 North Franklin Street

Chicago, Illinois

World's Largest Exclusive Builders of Industrial Sewing Machines and Specialists in Precision Parts for War Equipment



Make This Simple Test

It Will Show You A REAL SAVING *in Belt Costs!*

As a V-belt bends, you can actually feel its sides change shape! The top of the belt is under tension and grows narrower (see Figure 1, at right). The bottom is under pressure—therefore it widens. These stresses force a straight-sided V-belt to bulge in the sheave groove (Fig. 1), and this produces uneven wear on the belt sides, resulting in shorter life!

Now look at Figure 2. There you see how the concave side of the Gates Vulco Rope exactly corrects this bulging. It insures a perfect fit in the sheave groove with uniform side-wall wear and, therefore, longer life! It insures that the entire side-wall grips the pulley—heavier loads are carried without slippage—belts are saved and power consumption reduced.

Only belts built by Gates are built with the Concave side, which is a Gates patent.

What Happens When a V-Belt Bends

FIG. 1

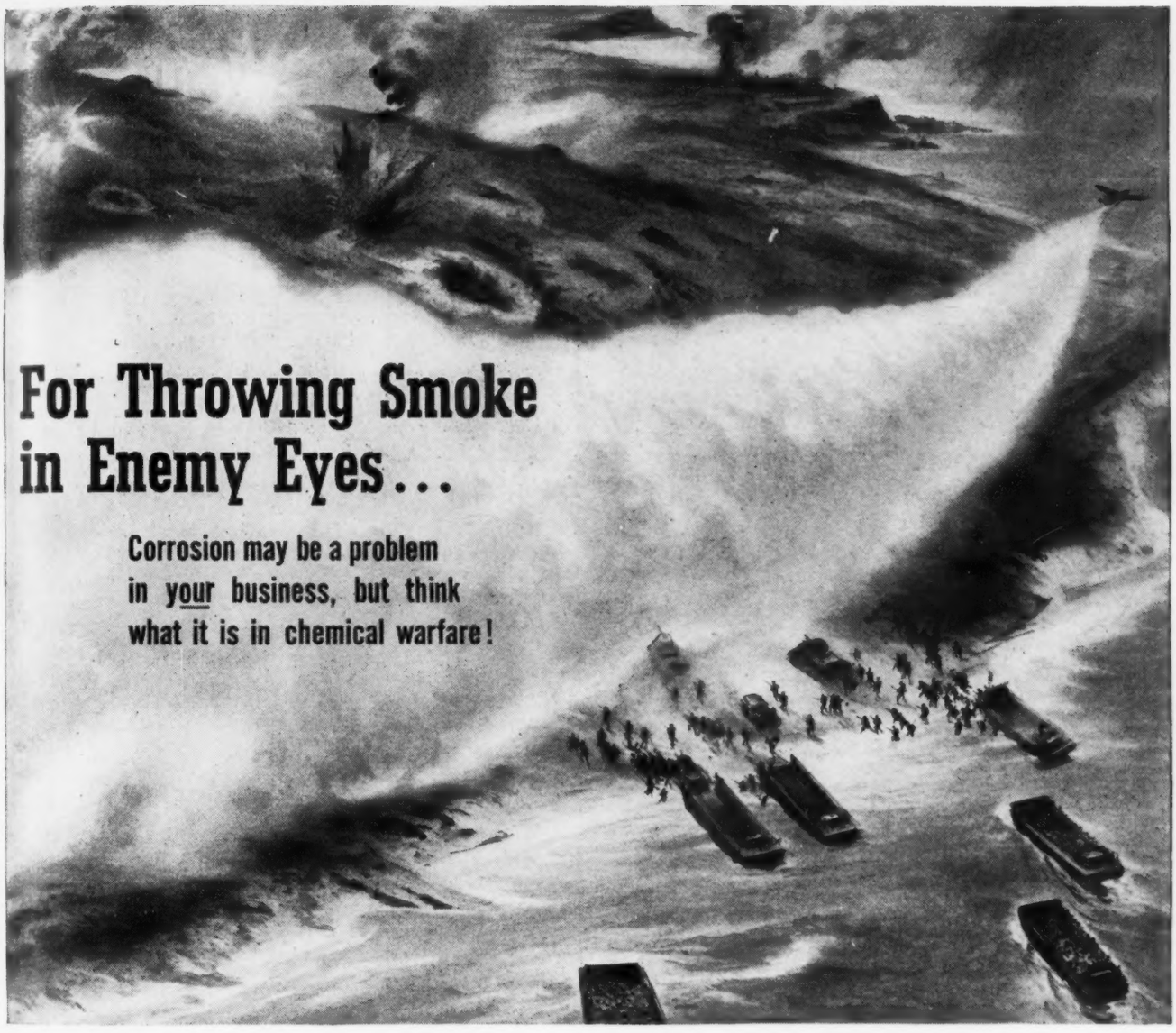
FIG. 2

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

Chicago, Ill. 549 West Washington
Dallas, Tex. 2213 Griffin Street
New York City 215-219 Fourth Avenue
Birmingham, Ala. 405 Liberty National Life Bldg.
Los Angeles, Cal. 2240 East Washington Blvd.
Charlotte, N. Carolina 507 Builders' Bldg.
Greenville, S. Carolina 201 Woodside Bldg. Annex
Atlanta, Georgia 738 C. & S. Natl. Bk. Bldg.



For Throwing Smoke in Enemy Eyes...

Corrosion may be a problem in your business, but think what it is in chemical warfare!

SMOKE SCREENS are used to shield our troop movements and save lives, or to disrupt movements by the enemy. Such screens involve the use of titanium tetrachloride. And that, as you may know, is an agent high up on the list of strong corrosives.

The same qualities that make Monel such a favorite for many kinds of equipment, its ability to resist corrosion combined with lasting strength, also make it extremely valuable in chemical warfare.

In this and in scores of other military applications on our many fighting fronts, Monel is contributing to the war effort. In the peace to follow, this durable, long-lived alloy will resume its place as an important factor in America's industrial progress.

THE INTERNATIONAL NICKEL COMPANY
67 Wall Street **New York, N. Y.**

★ ★ ★ ★ ★ **INCO NICKEL ALLOYS** ★ ★ ★ ★ ★

MONEL • "K" MONEL • "S" MONEL • "R" MONEL • "KR" MONEL • INCONEL • "Z" NICKEL • NICKEL

Sheet... Strip... Rod... Tubing... Wire... Castings

WRIGHT

Improved High Speed HOISTS

ARE FAMOUS FOR THEIR ABILITY TO STAND ABUSE—HELP THEM TO TAKE IT NOW—PROTECT THEM

The No. 1 precaution is: ***Don't Forget the Grease Gun!*** A busy **WRIGHT HOIST** needs thorough lubrication once a month. Keep your load chain well lubricated, too.

Wright's No. 2 precaution is: ***Don't Overload Your Hoist.*** Watch both the top and bottom hooks if in doubt about the carelessness of workmen. Wright hooks are drop-forged from special steel which, when overloaded, give visible warning by slowly opening. Wright load chains are also high in elastic limit. Don't continue to use hooks or chains that have stretched.

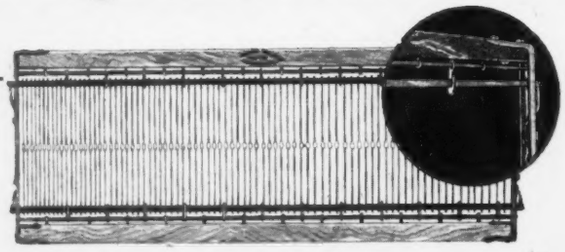
Take proper care of your **WRIGHT HOIST** so that it lasts. Where properly lubricated and maintained, many **WRIGHT HOISTS** have given continuous, trouble-free service for 20 to 25 years. You can find the name of your nearest Wright distributor in the telephone book.

WRIGHT MANUFACTURING DIVISION
York, Pa., Chicago, San Francisco, New York
In Business for Your Safety

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

75 YEARS OF EXPERIENCE BRINGS YOU

Increased Production through Better Construction



WALDER HARNESS FRAMES

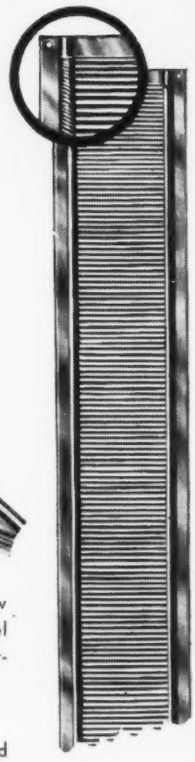
Our improved Harness Frames are constructed with Channel End Pieces, making the frame rigid both ways.

WALDER SHUTTLES

Wood and fiber-covered Shuttles in all types and sizes. Superior construction and finish.

WALDER RAYON REEDS

Our rayon reeds are constructed with a special, super-flexible semi-oval dent wire, which permits the passing of knots and eliminates the chafing and cutting of the warp-ends.



WALDER SHUTTLE SPRINGS

For Ribbons, Labels and Other Narrow Fabrics. Made of both brass and steel wire, with polished metal eyes in different colors. Springs all uniform.

● *Manufacturer also of* Bobbins, Quills, Card Wires, Mails and other items in a complete line of mill supplies.

JACOB WALDER

TEXTILE MILL SUPPLIES

188 River Street **Paterson, N. J.**

BEFORE THE TAKE-OFF *SINGER* IS ON THE JOB

Before one of the giant Curtiss "Commando" transports can take off, many things must be done. Men and women work day and night with many different tools and materials.

Singer sewing machines play a vital part in building planes, and clothing and equipping men for all branches of the armed forces.

Singer sewing machines formerly available for making hundreds of different things for civilian use are now sewing parachutes, uniforms, tents, gun covers, shoes, powder bags, fur lined helmets, and many, many other articles needed to bring speedy victory to US. And if, like many others, you are having trouble getting Singer sewing machines, remember that Uncle Sam is our first customer, and his needs must be satisfied first.

SINGER

SEWING MACHINE COMPANY

Manufacturing Trade Department

149 Broadway, New York, N. Y.

Branches in principal cities throughout the world

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(Photo courtesy of Curtiss-Wright Corp.)

BIFURCATORS
For Small-Arms Plants

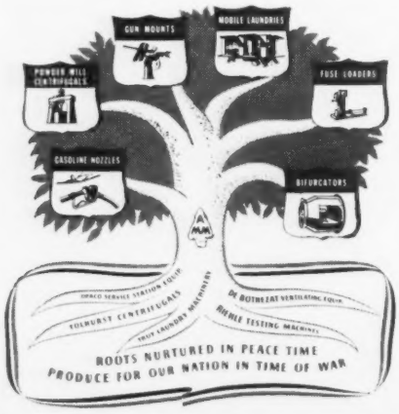
For High Achievement in War Production

OUR COMPANY'S plant at East Moline has just received the Army-Navy "E" award—an honor not easily won nor lightly bestowed.

The "E" stands for EXCELLENCE

EXCELLENCE . . . in quality and quantity of production.
EXCELLENCE . . . in overcoming production obstacles.
EXCELLENCE . . . in avoiding work stoppages.
EXCELLENCE . . . in maintaining fair labor standards.
EXCELLENCE . . . in training additional labor forces.
EXCELLENCE . . . in effective management.
EXCELLENCE . . . in safety, health and plant protection.
EXCELLENCE . . . in utilizing sub-contracting facilities.

DeBothezat Ventilating Equipment Division shared in this award by its production of "Power-Flow" Roof Ventilators and Bifurcators. This honor now becomes the challenge—the challenge to achieve even greater production records while maintaining superior standards of quality and workmanship. *"We've won the 'E' flag. We'll keep it flying!"*



DEBOTHEZAT VENTILATING EQUIPMENT
DIVISION OF AMERICAN MACHINE AND METALS, INC.
East Moline, Illinois

"WAR
In The Spinning Room!"

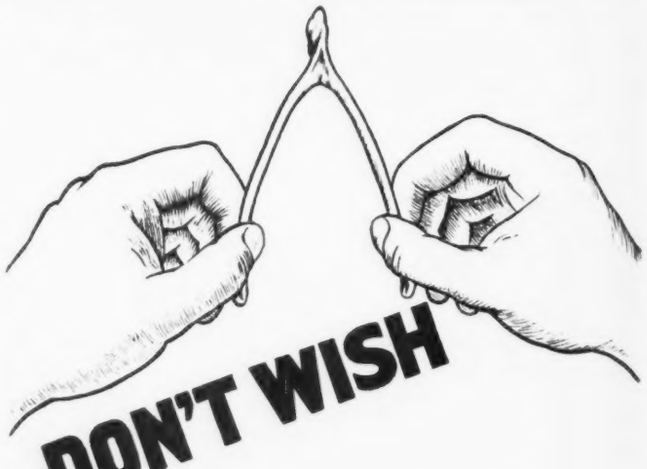
Today's all-out peoples's war reaches to all corners of the globe . . . even into your Spinning Room, where speed is as vital as victory itself!

Dary's job is to keep spinning production rolling in high by supplying high speed Travelers . . . superior Travelers made by skilled workmen, using Dary's famous 45 year old process that means unequalled Ring Travelers for today's "high-pressure" manufacturing!

See A Dary Representative TODAY!

The Dary Ring Traveler Co.
Taunton, Mass.

JOHN E. HUMPHRIES, Box 843, Greenville, S. C.
JOHN H. O'NEILL, Box 720, Atlanta, Ga.
H. REID LOCKMAN, Box 515, Spartanburg, S. C.



DON'T WISH
for better carding—make sure of it with
BOOTH
QUALITY CARD CLOTHING
50 YEARS OF SERVICE

Benjamin Booth Company
ALLEGHENY AVENUE and JANNEY STREET ◆ PHILADELPHIA, PA.

Use tough

SHELL TEXTILIS OILS

THE PROPER LUBRICANT may mean the difference between a productive machine and an idle one. Keep your machines running at full capacity with the right Shell Textilis Oil. There's a grade designed specifically for each type of textile-machine lubrication.

Call in your Shell man now. Have him check over your lubrication set-up ... point out how Shell Textilis Oils can help you maintain peak production of quality products with your present equipment.

SHELL

CENTRIFUGAL EXTRACTORS
for textile dewatering

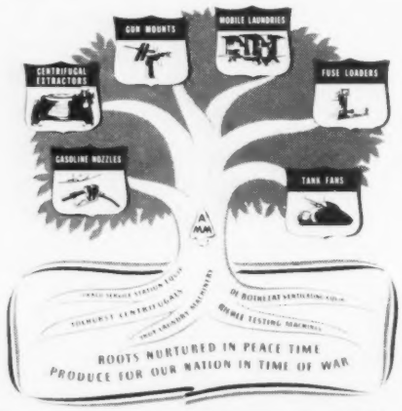
For High Achievement in War Production

OUR COMPANY'S plant at East Moline has just received the Army-Navy "E" award—an honor not easily won nor lightly bestowed.

The "E" stands for EXCELLENCE

EXCELLENCE . . . in quality and quantity of production.
EXCELLENCE . . . in overcoming production obstacles.
EXCELLENCE . . . in avoiding work stoppages.
EXCELLENCE . . . in maintaining fair labor standards.
EXCELLENCE . . . in training additional labor forces.
EXCELLENCE . . . in effective management.
EXCELLENCE . . . in safety, health and plant protection.
EXCELLENCE . . . in utilizing sub-contracting facilities.

Tolhurst Centrifugal Division shared in this award by its production of Centrifugal Extractors. This honor now becomes the challenge—the challenge to achieve even greater production records while maintaining superior standards of quality and workmanship. *"We've won the 'E' flag. We'll keep it flying!"*



Tolhurst Centrifugal
DIVISION OF AMERICAN MACHINE AND METALS, INC.
East Moline, Illinois

Standing Guard over TEXTILES

Taber ABRASER

Rapid accurate wear tests with Taber Abraser can be applied to all types of weaves and knits from finest hosiery to heavy overcoating.

Taber Abraser requires only a small swatch making it practical to test every bolt or lot of fabric. Excellent for testing finished and unfinished goods.

Scientific wear action of the "Calibrase" wheels is totaled by the built-in wear cycle counter.

Guard your quality reputation from complaints and rejections with Taber Abraser.

Write today for Bulletin 4001.

TABER INSTRUMENT CORP.
111TW Goundry Street **North Tonawanda, N. Y.**
ALFRED SUTER, 200 Fifth Avenue, New York, N. Y.
EASTERN REPRESENTATIVE
Designers, Builders of Precision Scientific Apparatus

USE OVENS FOR CONTROLLING

ARMY BLENDS

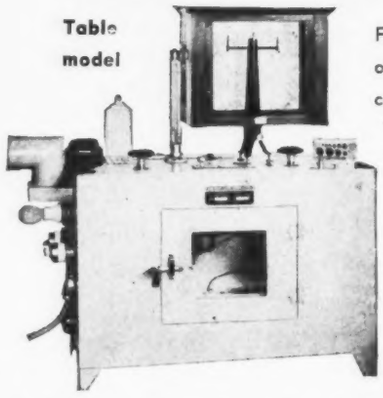
INGREDIENTS MUST BE ACCURATELY WEIGHED TO GIVE CORRECT COLOR SHADE

EMERSON CONDITIONING OVENS

test moisture content in raw materials, stock in process, and finished goods.

ELECTRICALLY HEATED AND CONTROLLED

Table model

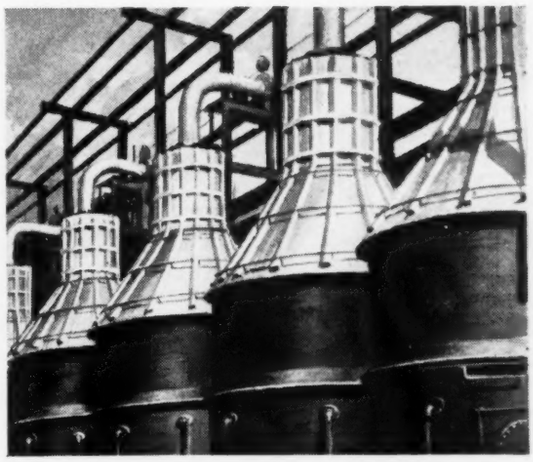


For different branches of the industry—wool, cotton, silk, rayon—we make different types of oven, equipped with baskets to fit the work, whether bulky or small samples.

EIGHT-BASKET OVEN. Can be equipped either with eight baskets 3" x 3" square and 6" deep or with six baskets 4¼" x 4¼" square and 6" deep. Sets on table.

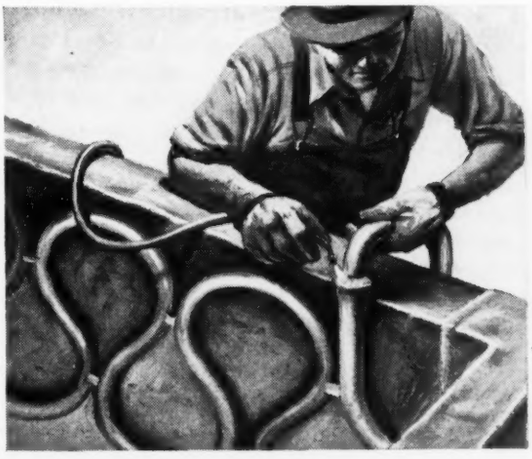
EMERSON APPARATUS COMPANY
177 Tremont St.
Melrose, Mass.

Tanks that can "Take It" and "Dish It Out"



1. THESE DAYS THAT'S A MUST for industrial acid tanks as well as war tanks. Acid producing and handling equipment has to take the 24 hour-a-day punishment of the non-stop production drive and keep on dishing out essential war materials—munitions, oil, metals, textiles, acids. That's why Tellurium Lead is used—not only for tanks but also for pipe lines and coils.

2. THIS NEW ALLOY STRENGTHENS UNDER STRESS —actually *work-hardens* when hammered, rolled, bent or stretched. A tough lead to begin with, it gets tougher. Thus joints and turn-over points are less subject to cracking . . . buckling and creeping are minimized . . . and resistance is increased to vibration and to fracture from repeated heat changes.



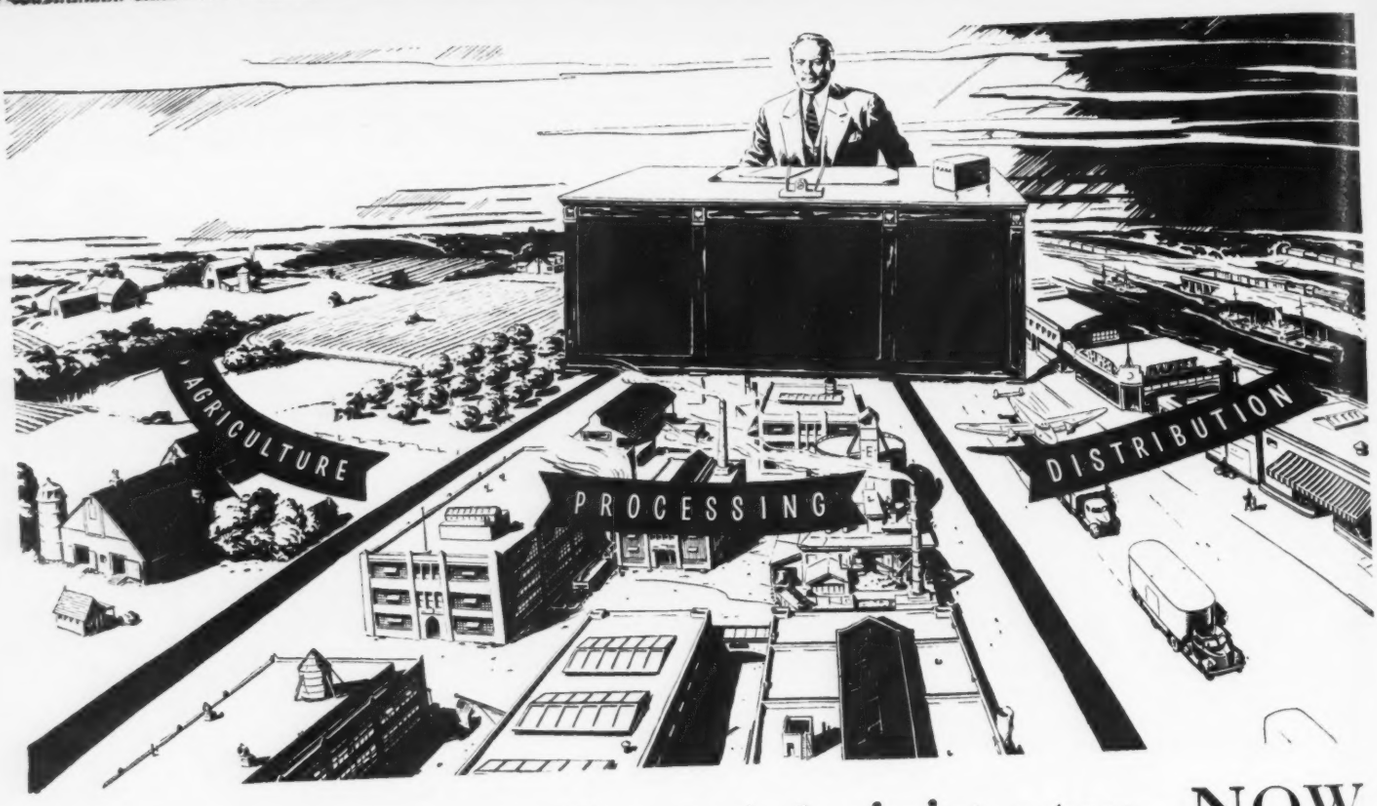
3. ANOTHER ADVANTAGE: Tellurium Lead is a heat-resistant lead—even at elevated temperatures it exhibits improved resistance to corrosion by sulphuric and other acids. In fact corrosion tests demonstrate that it will withstand acids at temperatures approaching its own melting point.

4. TELLURIUM LEAD IS TIME-TESTED St. Joe chemical lead, alloyed with a small quantity of tellurium. To the many desirable properties of this famous chemical lead it adds the important new advantages described above. Made in sheets, pipes and coils Tellurium Lead is cutting down shut-downs in vital acid equipment . . . helping speed the output of Liberty's Arsenal.

NATIONAL LEAD COMPANY—New York, Baltimore, Buffalo, Chicago, Cleveland, Cincinnati, St. Louis; National-Boston Lead Co., Boston; John T. Lewis & Bros. Co., Philadelphia; National Lead & Oil Co. of Penna., Pittsburgh; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis; Master Metals, Inc., Cleveland; The Canada Metal Co., Ltd., Toronto, Montreal, Winnipeg, Vancouver.

TELLURIUM LEAD

A NATIONAL LEAD COMPANY PRODUCT



America needs a Food Administrator – NOW

IN war or in peace, you and your fellow Americans require 1,465 lbs. (raw weight) of food every year. Soldiers require even more.

In all, for ourselves and our allies, America must produce, process and transport 250 billion pounds of food per year, for the duration, and for many years thereafter.

► Don't try to remember that figure, but *do* remember that food processing is a huge industry, in a high state of technical development, but not yet fully coordinated into the war effort.

The food industry needs over-all coordination, comparable to long-last rubber coordination. America needs an administrator of food supply; to assure priorities in equipment and transportation and to end conflicting and overlapping committee jurisdiction.

If the food supply gets into a tangle, through lack of a comprehensive plan, the result will make the rubber shortage seem a picnic in comparison.

► In the impending pandemonium, the Food Production Engineer will be strictly in the middle. He is neither a grower nor a global strategist, but a production man who must needs wait for government to call its shots on growing, equipment production and distribution.

The Food Production Engineer must see that the food is grown in proper quantities, at proper distances from his plant, and delivered in perfect condition . . . From that moment, he has all the problems of ordinary manufacturing, plus the job of contriving to retain the fleeting qualities of color, aroma, taste, texture and nutritive value which nature intended only for a few brief hours of ripeness.

That was tough to do, even in the days of unlimited refrigeration and canning. But under the urge of saving cargo space for men and munitions, new miracles have been worked.

Fortunately for us, in the continuous battle between bulk and low cubic content, the latter is winning.

Food Production Engineers—by developing machines and processes for trimming and compressing—have reduced whole sides of beef to a carton the size of a suit box.

► They have replaced sunken refrigerator ships by lining the holds of ordinary cargo vessels with boxes of frozen lard. Preserved by this Yankee "ice house" trick, frozen meats arrive overseas in perfect condition—while the lard goes to allied explosives plants for making TNT.

Eggs, stripped of their shells, travel through a fabulous array of processing machines, leaving space-taking water in America, but sending every ounce of energy-giving food value to our far-flung armies and allies.

When the Food Processor gets through with a basket of ripe tomatoes, you can hold the resulting cellophaned package in the palm of your hand . . . and only replaceable water has been lost.

► The work these men are doing will easily be the equivalent of launching a ship a day, as the processes which have been perfected are applied in more and more food plants.

If, under the constant pressure of tire, tin, and freight-car shortages, you find yourself sitting down to meals of dehyrated meats, fruits and vegetables, you can thank the Food Production Engineer for the fact that the tomato dishes will be ripe—red and delicious in taste, that soups are full-flavored and nourishing. That nothing has been lost but the water you have replaced.

Reprints of this advertisement are available in handy booklet form.

McGRAW-HILL PUBLISHING COMPANY, Inc.

330 WEST 42ND STREET • • NEW YORK

This advertisement appeared in a group of newspapers on Tuesday, October 13, 1942

How do you get the cube root of a cow?

READ the newspaper advertisement, reprinted opposite, and you'll see we are telling the public (and government) about the job engineers are doing in stuffing bigger food production into fewer ships.

When you get to that part of the ad that tells about Food Engineers reducing a cow's carcass to the size of a couple of suit boxes, you will have reached the point where McGraw-Hill really lives.

In Food Production, too, it's our job to collect the "how-to-do-it" news on each new advance in technology and equipment, and pass on this information to an entire industry.

The Industrial Press of America implements the exchange of ideas, which is a national characteristic and one of the secrets of our industrial development.

Through the interchange of ideas, made possible by the Industrial Press, the sum of American technical genius is greater than the sum of its parts.

If a food engineer in Illinois learns how to add and control Vitamin A in a food product, all food manufacturers learn how it was done, through a magazine like FOOD INDUSTRIES.*

If a manufacturer develops a new dehydrating machine, production men learn what it will do and how it operates, through the informative and helpful advertising that is characteristic of the Industrial Press.

No matter what your industry or your job, you can probably remember many instances where an industrial magazine has helped you find a solution to a production problem.

But valuable as they are, Industrial Magazines cost only a few dollars per year.

That's why the route slip is so puzzling. If a man needs to see a magazine at all, he should not be under pressure to pass it along.

For help in studying the proper distribution of technical magazines among the men in your organization, write to the Reading Counsellor, c/o McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York.

* * *

THE McGRAW-HILL NETWORK

23 publications, which gather "war-news" from the "war-production-front" through a staff of 153 editors and 725 engineer-correspondents . . . More than 1,000,000 executives, designers, production men and distributors use the editorial and advertising pages of these magazines to exchange ideas on war-production problems.

THE McGRAW-HILL BOOKS

Publishers of technical, engineering and business books for colleges, schools, and for business and industrial use.

McGRAW-HILL PUBLISHING COMPANY, Inc.
330 WEST 42nd STREET • NEW YORK

THE McGRAW-HILL NETWORK OF INDUSTRIAL PUBLICATIONS

American Machinist
Aviation
Bus Transportation
Business Week
Chemical & Metallurgical Engineering
Coal Age
Construction Methods
Electrical Contracting
Electrical Merchandising
Electrical West
Electrical World
Electronics
Engineering & Mining Journal
E. & M. J. Metal and Mineral Markets
Engineering News-Record
Factory Management & Maintenance
*FOOD INDUSTRIES—Shows how to Manage Production, Retain Nutrition and Appetite Appeal.
Mill Supplies
Power
Product Engineering
Textile World
Transit Journal
Wholesaler's Salesman

WORLD'S LARGEST RING-MAKING PLANT

On a foundation of *Quality*

The grandfathers of today's mill men found rings sold under the new "DIAMOND FINISH" trademark to be a quality product. They learned through the years that they could depend on rings of this name to perform with exceptional satisfaction. Today we are the world's largest ring making plant, and for just one reason: the Quality of our rings yields extra values in easy starting and long life.

We make all types of Holders

WHITINSVILLE (MASS.)

SPINNING RING CO.

Makers of Spinning and Twister Rings since 1873

DIAMOND FINISH

COTTON WARPS

Cotton Yarn and Warps . . Single or Ply . . White or Colored . . Carded . . Combed

Novelty yarns—of cotton. worsted, wool, mohair, rayon — in all fashionable combinations and effects and in many original effects. Write for samples.

Sell Direct

Dana Warp Mills . . Westbrook, Maine

MOHAIR WORSTED AND WOOLEN YARNS

COLLINS & AIKMAN CORPORATION

PERCY A. LEGGE *Sales Agent*

New York • Philadelphia • Boston

OSCAR HEINEMAN CORPORATION

•

PROCESSING

Rayon and Nylon Yarns

for Hosiery Knitting Trade

We specialize on high twist rayon processed with "AVCONIT No. 1" for full fashioned hosiery.

2701 Armitage Avenue Chicago, Illinois

Aberfoyle Mfg. Co., 123 So. Broad St., Philadelphia, Pa.
N. P. Murphy, 813 Guilford Bldg., Greensboro, N. C.
C. D. Gott Co., 3303 Brainerd Rd., Chattanooga, Tenn.

LAZENBY

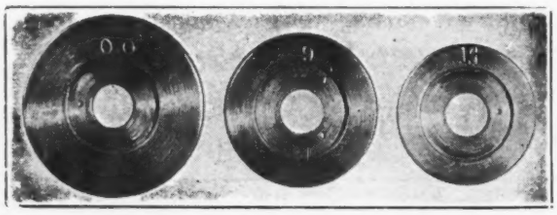
FILLING WINDERS

Produce Filling of *maximum yardage* in Cop, Butt and Bobbin form for plain or automatic looms at minimum operating cost and maintenance.

Send us a small supply of your yarn for Test-Wind Report and Catalog.

F. A. LAZENBY & CO.

31 E. LEE STREET, BALTIMORE, MD.



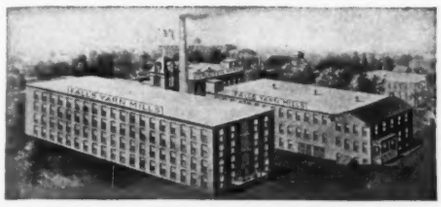
Wayne Traverse Wheels for use on your Universal No. 90 winders, made of **oil hardened tool steel** or of bone hard fibre, cannot be beat for service and quality in their respective fields.

Our hardened steel wheels will last indefinitely, and because of their hardness will not cut or become nicked and therefore damage your silk. These wheels are accurately made. The size is correct and the finish of the face of the wheel is as smooth as polishing can make it.

If you want a softer and less expensive wheel we offer you our hard fibre wheels. These wheels are made of bone hard fibre, and are manufacturd with the same accuracy and care as our steel wheels. These fibre wheels will give you the maximum of results that you can expect of a soft wheel. If, for any reason, you feel that you would like to try out fibre wheels, let us know and we will send you a sample of the size you want.

WAYNE MFG. CO. **Honesdale, Pa.**

FALLS YARN MILLS
WOONSOCKET, R. I.
Incorporated 1904



Fine Woolen and Specialty Yarns For Weaving and Knitting

SELL DIRECT

NEW YORK	PHILADELPHIA	CHICAGO
Stanley Porter	Harold R. Shirley	C. M. Patterson
257—4th Ave.	Commercial Trust Bldg.	222 West Adams St.

RAYON TOPS

Standard Grades—Lustrous—Delustred—Superfine
Rayon Noils . . Staple Fibre
ANDREW K. HENRY
158 Summer St. Boston, Mass.

Cut Loom Lubrication Cost *by Half*

Lubricating looms with oil doubles your costs. You pay once for oil that's used. Once again for what's wasted by dripping and spattering. What's more serious—oil spots cause heavy losses and cut production.

NON-FLUID OIL stays in bearing until consumed. Stops oil spots, increases production and cuts lubricant cost.

Write for instructive bulletin

New York & New Jersey Lubricant Co.
***Main Office:* 292 Madison Ave., New York, N. Y.**
Southern Agent, Falls L. Thomason, Charlotte, N. C.

WAREHOUSES

Chicago, Ill.		Atlanta, Ga.
Providence, R. I.	Detroit, Mich.	Charlotte, N. C.
St. Louis, Mo.		Greenville, S. C.

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT OFFICE & FOREIGN COUNTRIES
MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

THOS. WOLSTENHOLME SONS & CO. INC.
3300 Frankford Avenue
Philadelphia, Pa.

Yarns for all purposes

French and English Spun Worsted
French Spun Zephyr
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Representatives:—
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CHICAGO—C. F. Peffer, 222 W. Adams St.

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textile
crayons
THE IDEAL
MARKING
CRAYON
for all textiles
ACTUAL SIZE
Made especially for marking the roving in wool, cotton, silk, rayon, and all textile mills. 18 colors available. Write Dept. TW-9 today for FREE Color Chart!
*REG. U. S. PAT. OFF.
THE AMERICAN CRAYON COMPANY
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NEW YORK SAN FRANCISCO DALLAS

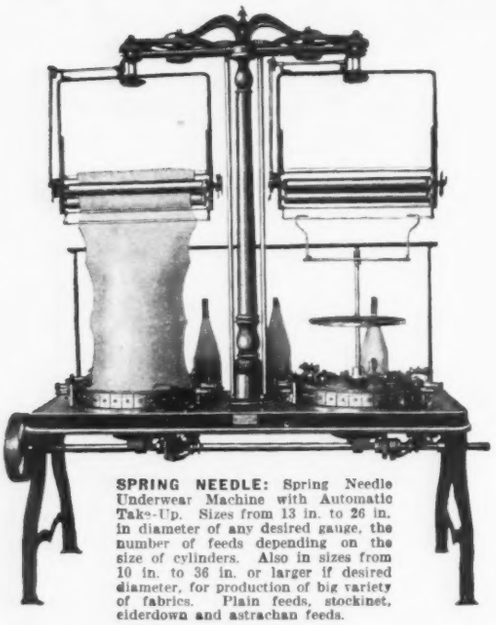
THE OLDEST AND LARGEST
MANUFACTURER OF
Ring Spinning and Twister Travelers

In the UNITED STATES
American•Hicks•Wilson
United States Standard Wentworth Double Duty and Gravity Travelers
MAKE STRONGER YARN
National-Etartnep Finish
A New Chemical Treatment
Write Us
National Ring Traveler Company
354 Pine St., Pawtucket, R. I.
PHILIP C. WENTWORTH, *Treas.*
P.O. Box 1565. Providence, R. I. Charlotte, N. C.

CRANE

KNITTING MACHINES

meet the need for Speed—
for Quality and Low Cost



SPRING NEEDLE: Spring Needle Underwear Machine with Automatic Take-Up. Sizes from 13 in. to 26 in. in diameter of any desired gauge, the number of feeds depending on the size of cylinders. Also in sizes from 10 in. to 36 in. or larger if desired diameter, for production of big variety of fabrics. Plain feeds, stockinet, elderdown and astrachan feeds.

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are Patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why
—and how . . . just ***WRITE***

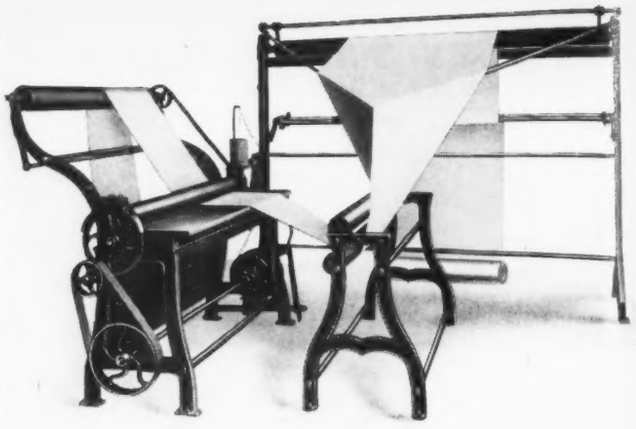
CRANE Improved Automatic
3 Colored

Improved Automatic 3 Colored Plain Stripes. Made in sizes from 7⅝ in. to 20⅝ in. inclusive, of any desired gauge. Measurements are back to back of cylinder needles. Knit fabrics for bathing suits, theatricals, athletic goods. Crawford stop motion applied when requested.

1870 **CRANE** 1942

MANUFACTURING CO.
LAKEPORT, N. H.

Spring Latch Needle
KNITTING MACHINERY



No. 27—IMPROVED DOUBLING AND TACKING MACHINE

Sewing any length stitch up to 1¼ in., making a firm, strong stitch for any weight or width of goods. This machine is equipped with our latest oscillating needle bar sewing head, which makes it the fastest tacking machine on the market for tacking the selvages of woolen and worsted fabrics. For further information, send for our catalog.

DINSMORE MFG. CO.

SALEM, MASS.

CHARLES COOPER CO., INC.
Bennington, Vermont

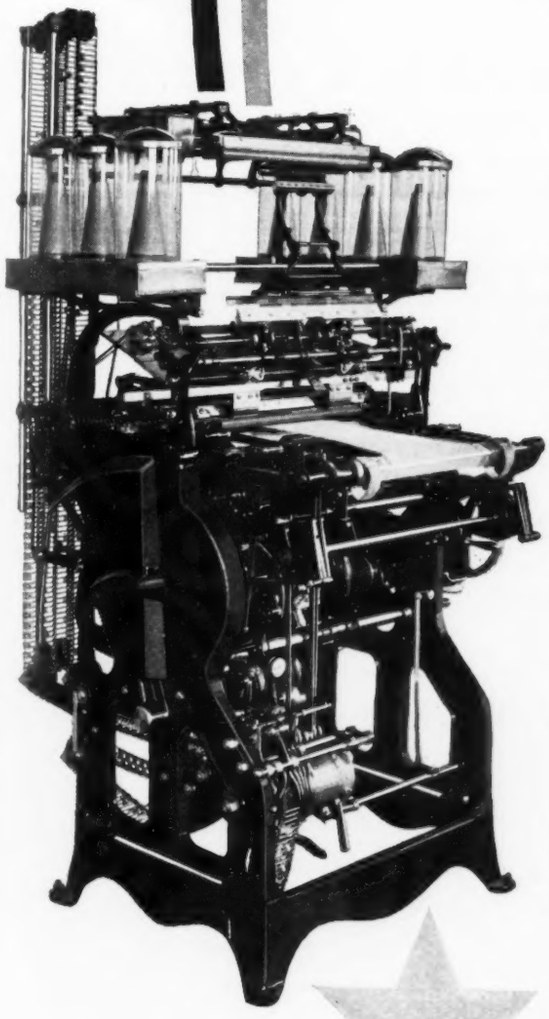
Manufacturers of
Quality LATCH and SPRING-BEARD

NEEDLES

also
Manufacturers of **THE FAMOUS COOPER CIRCULAR SPRING-NEEDLE RIB KNITTING MACHINES**

The WILDMAN "LIMITED"

for AMERICA
"Throw your SCRAP into the FIGHT"
AMERICAN INDUSTRIES SALVAGE PROGRAM



In these days of economic pressure, the machine that saves production and man hours justly stands high in manufacturing circles.

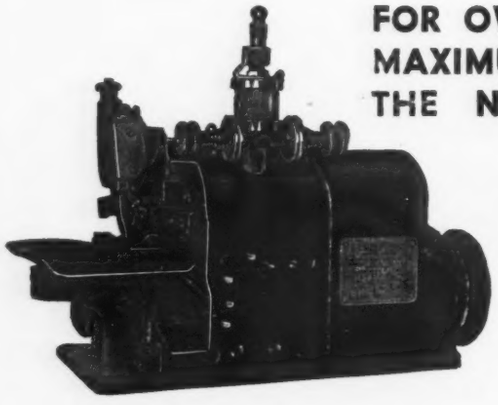
THE WILDMAN
Single-Head, Single-Unit, Full-Fashioned Hosiery Machine

deserves the title of "limited" for the fast, express job it is doing wherever in service. It saves precious running time by knitting the entire stocking in one continuous operation, perfect from top to toe, and elimination of stops and slow-downs and the bad matching of leggers and footers.

Because of war work our production is limited to supplying repair parts.

WILDMAN
MFG. CO., NORRISTOWN, PA.

Established 1838 **MERROW** **Incorporated 1894**



FOR OVERSEAMING AND OVEREDGING WITH MAXIMUM EFFICIENCY — MODERNIZE WITH THE NEW MERROW CLASS A MACHINES

The result of several generations of specialized effort in the industrial sewing machine field—combining quality production with high speed and low operating cost to a greater degree than ever before.

WRITE FOR DETAILS AND LET US DEMONSTRATE THESE MACHINES ON YOUR OWN FABRICS.

ALSO PLAIN CROCHET AND SHELL STITCH MODELS FOR ORNAMENTAL EDGE FINISHING AND CLASS 60 MACHINES FOR BUTT SEAMING

200 VARIETIES FOR 200 PURPOSES

THE MERROW MACHINE COMPANY

Starting Its Second Century

2803 LAUREL STREET HARTFORD, CONN., U. S. A.

Acme Products

for seamless hosiery knitting

Speak for themselves

Up-To-Date Machines

Needles

Economy Makers

ACME KNITTING MACHINE & NEEDLE CO.

FRANKLIN, N. H.

CLOTH-FINISHING EQUIPMENT

Drying Cylinders, Mixing Kettles, Color Strainers, Dippers and Scoops, Quetches, Compensating Rolls, Laundry-Type Washers and Dryers, Metal Trucks, Hosiery-Dyeing Machines

90% of Our Orders Are Repeats

Good will is the disposition of a customer to return to where he has been well served.—U. S. Supreme Court.

J. E. CARROLL & CO.

LOWELL, MASS.

THE LOYAL T. **IVES** COMPANY EST. 1874

SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines: Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY

STYLE APPEAL

is dependent, to no small degree, upon proper processing of all the fibres and fabrics which comprise milady's wardrobe. . . . Hosiery, gloves, blouses, skirts, underthings, all owe much of their *charm* and *wearability* to the fact that they are properly processed with proven compounds.

Since 1907, constant familiarity with the consumers' requirements, — never ceasing research, — and increased laboratory and manufacturing facilities have kept Scholler Products abreast of the times.

SCHOLLER BROS. INC. Mfrs. of Textile Soaps, Softeners, Oils, Finishes. Collins and Westmoreland Sts., Philadelphia, Pa., St. Catharines, Ontario, Can.

*Reg. U. S. A. and Canada

Dura Beau *FINISHES

Machine and Hand Knitting

Yarns

[French-Bradford]

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

★

Complete color assortments

American Woolen Company

225 Fourth Avenue New York

TOMPKINS

CIRCULAR SPRING NEEDLE

KNITTING MACHINES

FOR PRODUCING

UNDERWEAR	OVERCOATS
SWEATERS	TERRY CLOTH
SWEAT SHIRTS	STRIPED CLOTH
DRESS CLOTH	PATTERNS

RUBBER LAY-IN FABRICS

CIRCULAR LATCH NEEDLE

KNITTING MACHINES

FOR PRODUCING

TOQUES	SCARFS
PARKAS	SHAKER CAPS

TOMPKINS BROS. CO.

SINCE 1846 SYRACUSE, N. Y.

ONYX

Many processors and finishers of textiles working on government orders are depending on Onyx products and Onyx chemists and technicians to meet specification and production demands. Rapidly changing conditions in all of the raw material fields make very necessary the closest cooperation between Onyx technicians and the textile plants to keep production going. Mills and finishing plants are urged to consult with us on their processing and finishing problems. Onyx research and production facilities are at your service. We are helping others, perhaps we can help you. Your inquiries are solicited.

ONYX OIL & CHEMICAL CO.
JERSEY CITY, N. J.

New England Office:
511 Westminster Street, Providence, R. I.
Charlotte Office:
121 East Third Street, Charlotte, N. C.
Mid-Western Representatives:
Maher Color & Chemical Co.,
Chicago, Ill.; Los Angeles, Calif.
In Canada: Onyx Oil & Chemical Co., Ltd.,
Montreal, P. Q.; Toronto, Ont.

onyx

RAPIDASE

THE STANDARD DE-SIZING AGENT

for cottons, rayons and mixed goods

For your de-sizing problems — our technical men are at your service . . . Write or 'phone.

WALLERSTEIN COMPANY, INC.
180 MADISON AVENUE, NEW YORK

PENICK & FORD, LTD.,
INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS
NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA
SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John: Let's order new Douglas Spunray Gum for warp sizing spun rayons, spun acetates and mixtures.
Understand protects yarns like standard starches yet desizes completely in soap and water.
Jim

SAVE BLEACH

How to get whiter whites when bleach is scarce is every mill's problem. You can count on PQ Silicates to help to conserve your bleach. PQ Silicate in the bath properly controls its release, avoiding waste.

Leading mills save money by using the right silicate in scouring, in boil-off and other detergent textile processes. You'll want complete information on how you can maintain quality whiteness with less bleach. Call on us.

PQ Silicates for Textile Processes:

Star Brand, brilliantly clear 42° Baumé silicate

Metso Granular, white, free-flowing granulated metasilicate of soda

PHILADELPHIA QUARTZ COMPANY

125 S. Third St., Philadelphia, Pa.

Chicago Sales Off.: Eng. Bldg.

Distributors in Over 60 Cities

Nine Plants

PQ SILICATES OF SODA

FULLITIN

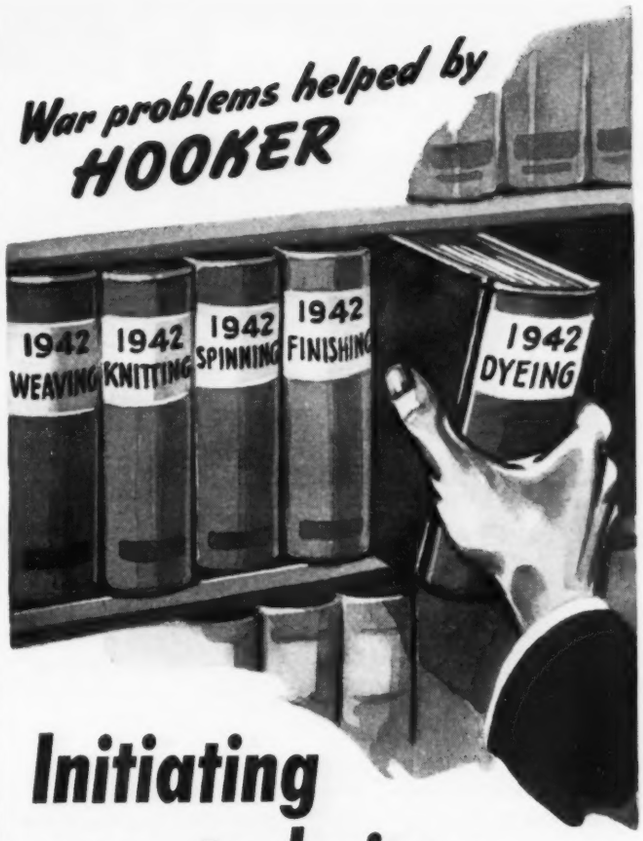
1. Used in place of soap for fulling, it eliminates the lengthy soap boiling operation.
2. Used with soap, it prevents congealing, eliminating stuck places, creases and whiplashes.
3. Permitting the use of stone cold soap, it prevents the troubles that hot soap causes.

Sample on request

ERNST BISCHOFF CO., Inc.

IVORYTON --- CONN.

War problems helped by **HOOKER**



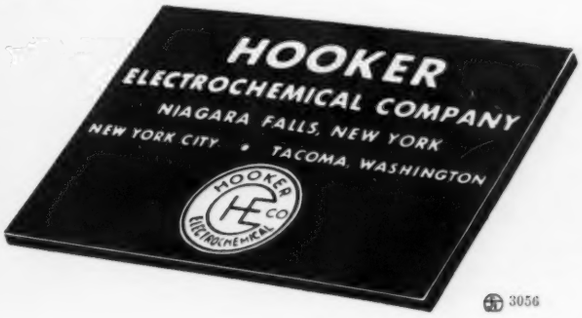
Initiating new technique

The rising tide of war, submerging the fading foibles of fashion, has necessitated many a new technique in dyeing, finishing —even in spinning, knitting and weaving.

HOOKER Chemicals

are helping to solve these war problems by their purity and uniform adherence to specifications. Helping too is assistance by HOOKER technical specialists, always ready to advise on problems within their fields.

HOOKER chemicals for the textile industry include anhydrous aluminum chloride and antimony trichloride, benzal chloride, benzoyl chloride, benzyl chloride, chlor anisidine, dichlor aniline, caustic soda, chlorine, meta nitrobenzoyl chloride, para nitrobenzoyl chloride and many other inorganic and organic intermediates.



3056

MILL STARCH

The Weaver's Friend

- Always Uniform
- Dependable
- Carries Weight Into the Fabric
- Penetrates Thoroughly
- Boils Thin

Distributed by
CLAUDE B. ILER
Southern Manager
GREENVILLE, S. C.

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HOMEWOOD, BIRMINGHAM, ALA.

C. C. SWITZER
GREENVILLE, S. C.

L. J. CASTILE
CHARLOTTE, N. C.

The Keever Starch Company, Columbus, Ohio

STANDARD SILICATES

KIER BOILING

For better whites and level results, use a pound of STANDARD Grade 40 Silicate with each 3 to 5 lbs. of caustic in your kier boiling formula. Troublesome stains are eliminated and scarce chlorine is saved.

Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

ALKALI

DIAMOND ALKALI COMPANY
STANDARD SILICATE DIVISION
GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA
Plants at CINCINNATI · JERSEY CITY · LOCKPORT, N. Y.
MARSEILLES, ILL. · DALLAS, TEXAS

D. R. KENYON & SON

RARITAN, N. J.

TENTERING and DRYING MACHINERY

ROME SOAP MFG. CO.

WRITE US FOR SAMPLES AND QUOTATIONS

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

APPROVED
DANDUX
BASKETS
MADE BETTER
LAST LONGER

DANDUX 100 LAUNDRY BASKET

BUILT to exacting quality standards of finer materials, they have been preferred in the textile field, because their superior construction assures longer life, greater durability and satisfaction. Yet they cost no more than the ordinary.

You, too, will find greater value in Dandux Baskets, Hampers and Trucks.

DANDUX QUALITY CANVAS

C.R. DANIELS, INC.
Manufacturers of Everything of Canvas
101 CROSBY ST. • NEW YORK, N.Y.
Newark • Boston • Buffalo • Chicago • Cleveland • Detroit
Milwaukee • Philadelphia • Pittsburgh • Alberton, Md.

ON WHICH
of these 7 jobs can Oakite cleaning save time for you?

1. Cleaning heddles, other loom parts
2. Washing mill floors
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Give full details with references in application.

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LEGAL NOTICE

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of Textile World, published monthly at Albany, N. Y., for October 1, 1942.

State of New York } ss.
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared J. A. Gerardi, who, having been duly sworn according to law, deposes and says that he is the Secretary of the McGraw-Hill Publishing Company, Inc., publishers of Textile World, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, McGraw-Hill Publishing Company, Inc., 330 West 42nd St., N. Y. C. Editor, Douglas G. Woolf, 330 West 42nd St., N. Y. C. Managing Editor, William B. Dall, 330 West 42nd St., N. Y. C. Business Manager, William Buxman, 330 West 42nd St., N. Y. C.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder, the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) McGraw-Hill Publishing Company, Inc., 330 West 42nd St., N. Y. C. Stockholders of which are: James H. McGraw, 330 West 42nd St., N. Y. C. James H. McGraw, Jr., 330 West 42nd St., N. Y. C. James H. McGraw, James H. McGraw, Jr., and Curtis W. McGraw, Trustees for: Harold W. McGraw, James H. McGraw, Jr., Donald C. McGraw, Curtis W. McGraw, 330 West 42nd St., N. Y. C. Curtis W. McGraw, 330 West 42nd St., N. Y. C. Donald C. McGraw, 330 West 42nd St., N. Y. C. Anne Hugus Britton, 330 West 42nd St., N. Y. C. Mildred W. McGraw, Madison, N. J. Grace W. Mehren, 73 No. Country Club Drive, Phoenix, Ariz. J. Malcolm Muir & Guaranty Trust Co. of New York, Trustees for Lida Kelly Muir, 140 Broadway, N. Y. C.

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5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is. (This information is required from daily publications only.)

J. A. GERARDI, Secretary.
McGRAW-HILL PUBLISHING COMPANY, INC.

Sworn to and subscribed before me this 29th day of September, 1942.

[SEAL] CHESTER W. DIBBLE.

Notary Public, Queens County. Queens County Clerk's No. 4166. Certificate filed in N. Y. Co. Clerk's No. 889.

(My commission expires March 30, 1943)

Yes, Uncle Sam

We're helping TEXTILE MILLS win the Battle of Production for you . . . by locating

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YES, Uncle Sam, we're doing the biggest job we've ever tackled—bigger than just buying and selling good used textile machinery—our specialty for the past 16 years. IF we do not have it in stock, we employ all our facilities to locate critical machinery for textile mills in all parts of the country—*frequently before it is placed on the open market* . . . taking it from where it is—delivering it to the place where it is needed, to convert present mills from peace-time to war-production.

1. To EQUIP new mills — **2. To EXPAND production** — **3. To REPLACE worn-out units** — **4. To SUPPLY repair parts**

The WAR-time production of textile mills, slowed or stopped completely by lack of equipment, is being put back on schedule by the installation of good used textile machinery. And Machinery Liquidating Company is doing its part—locating badly needed machinery—frequently persuading mill owners to part with idle equipment they had no intention of selling —placing it where it is badly needed. Yes, Uncle Sam . . . and Mr. Mill Owner, we will find those used textile machines for you—if they are to be found—machines needed to supply the production requirements of our armed forces, lend-lease, and essential civilian requirements. "When you need good used textile equipment, telephone: PEnnsylvania 6-8014."

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8—Whitin D-2 Combers
3—Whitin C Combers
1—72" Gessner 2 Cyl. Semi-Decating Mtr. Dr.
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1—set 23 Lincoln 88" Face Copper Dry Cans, Horizontal Frames
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1—150 yd. Kenyon Return Tenter Dryer 65" opening
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3—Smith Drum Paddle Dyeing Machines with motors, 1-25 lb., 1-50 lb., 1-100 lb.
1—56 Arm Mayoux Skein Dyeing Machine driven with monel and copper tanks
1—24" Empire Copper Basket Extractor, belt dr.
1—36" Empire Copper Basket Extractor Belt Dr.
1—40" Tolhurst Copper Basket Extractor 3/60/220 v. motor, Extra Basket
2—48" Tolhurst Copper Basket Extractors, belt dr.
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1—Schultz Fulling Mills
1—60" wide, 3-cyl. 30" dia. Garnett, automatic
2—54" and 64" Inspecting & Winding Machines
35—S&W Mod. K Knitters, 48 gge. 3" to 3½" 160 to 220 N. with attachments
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100—42" and 48" C & K 4 x 1 Automatic Looms
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12—72" C & K (4x4) Tapestry Looms with 1300 Jacq. mtr. dr.
30—82" C & K 4x1 Auto Looms, Roller Tops, motor driven
10—92" C & K 4x4 Box Looms
100—92" Draper Model L auto Looms, belt dr.
4—120" C & K (4x4) 25 harness Looms
2—60" P & W Selvage Trade Markers
1—80 inch Woonsocket 24 roll D. A. Napper
1—65" Van Vlaanderen Palmer
1—50" Morrison Triune Finishing Mach. Quetch Palmer Tenter
1—36" D & F Mixing Picker with Bramwell Weed & Spencer Oiler
1—48" C & M Mixing Picker
1—65" Voelker Rotary Cloth Press
1—42" Rice, Barton & Fales, 7-color Prtg. Mach., Dry Cans, etc.
1—43" Rice, Barton & Fales 8 color Prtg. Mach., Dry Cans, etc.
1—54" Textile Mach. Co. 8 color Prtg. Mach. complete with 2—G.E., 35 HP mtrs.
1—52" Waldron 12 color Printing Mach., complete with Westge slip ring, motor, 50 HP.
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2—120 Sp. H & B 4" Ring 5" Gauge Twisters 4-ply band drive, belt driven
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175—Spindles— 17⅛" Overall—13½" Blade
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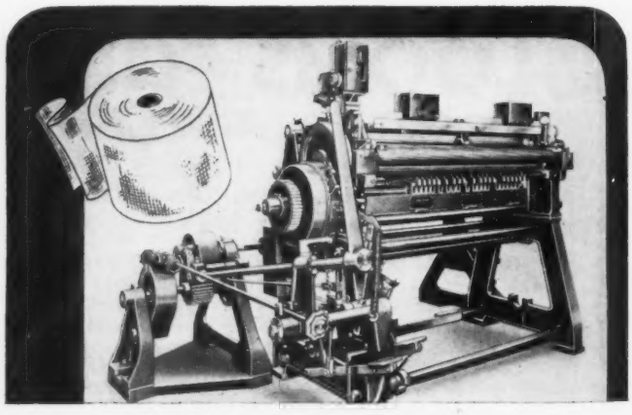

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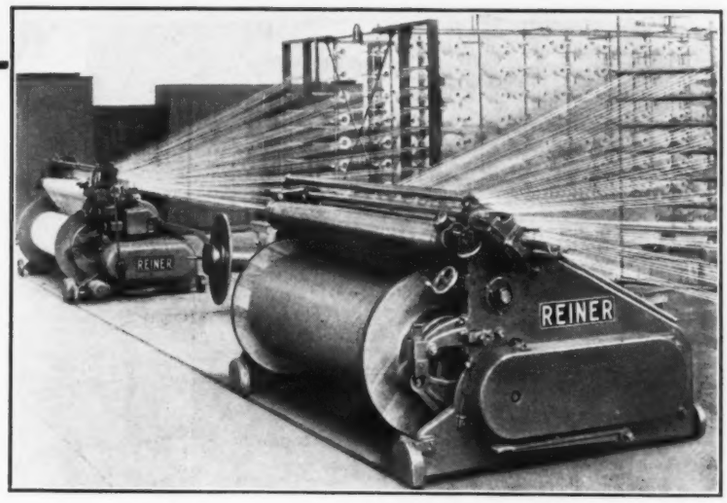

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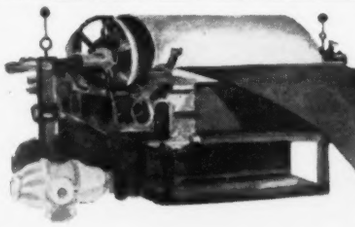

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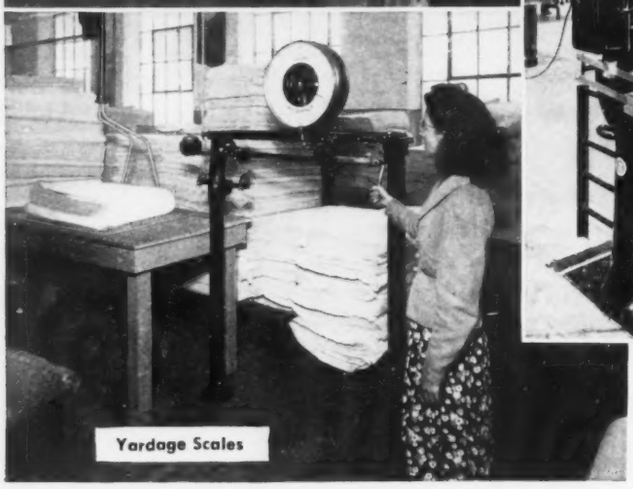

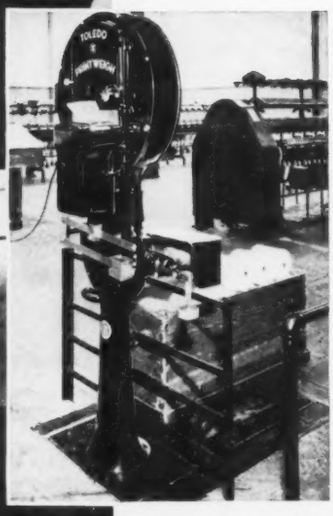

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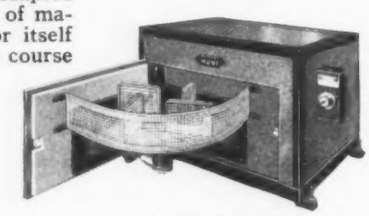

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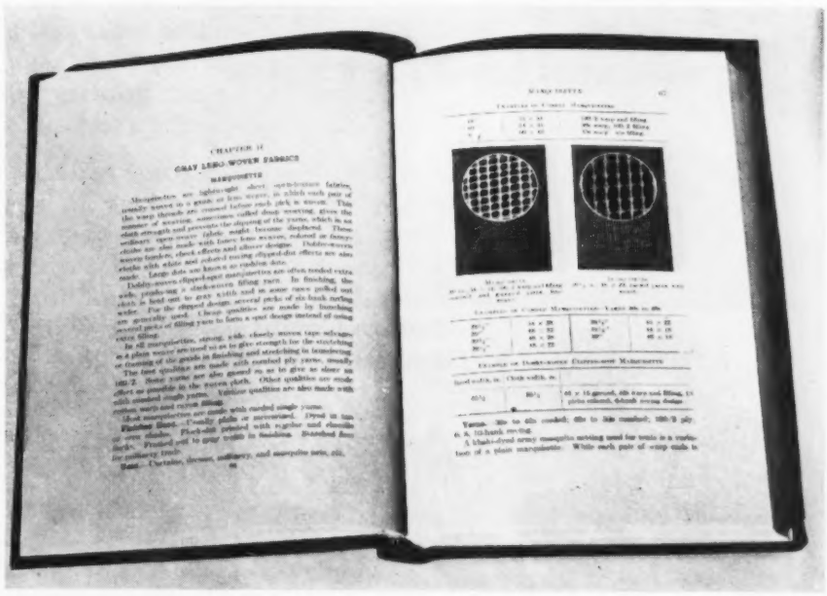

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JOHN HOYE

Instructor, New York Textile Evening Trades School

241 pages, 6 x 9, illustrated, $3.50

FLOYD W. JEFFERSON *says in his Introduction to the book:*

"Beginning with a description of the many kinds of plain-woven cloths, the various types of twills and sateens, the author traced the combinations and derivatives of these basic cloth constructions into multiharness dobby and Jacquard creations.

"He then showed the infinite variety of styles and effects that had been made possible since the introduction of rayon and other synthetic yarns, illustrating various cloths made through the combination, admixture, and the blending of different fibers.

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"Collected in this volume, these articles now become a much-needed textbook for the student and will prove invaluable to the manufacturer, designer, and converter, and to those who recognize the public demand for constantly changing styles and effects in textiles."

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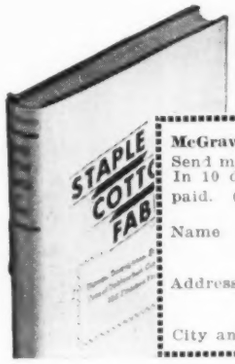
8. Tickings
9. Flannels
10. Seat-cover and Awning Fabrics
11. Drapery Slip-covers, and Upholstery Fabrics
12. Table-cover Fabrics
13. Corset Fabrics
14. Bedspread Fabrics
15. Cut-pile Fabrics
16. Filled and Coated Fabrics

Descriptions and Names of Converted Cloths (Not Basic Fabrics)



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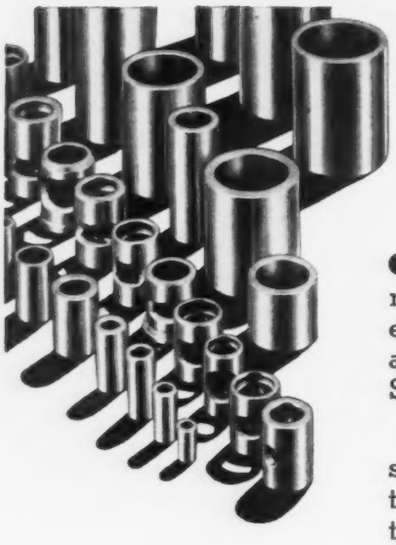

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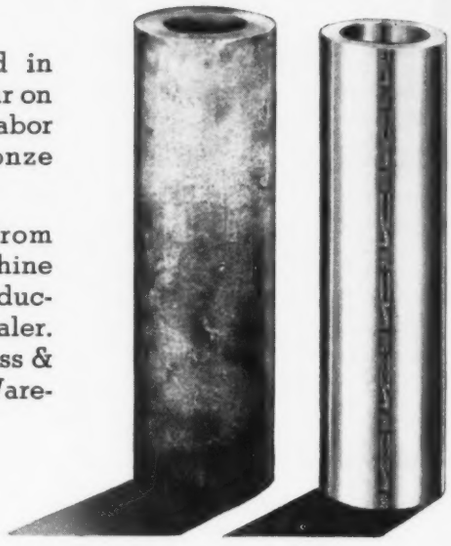

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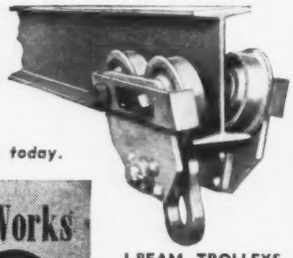

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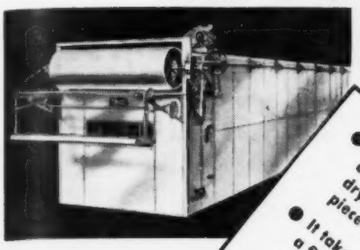

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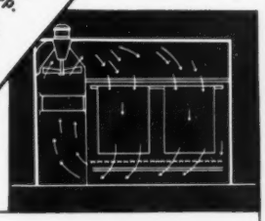

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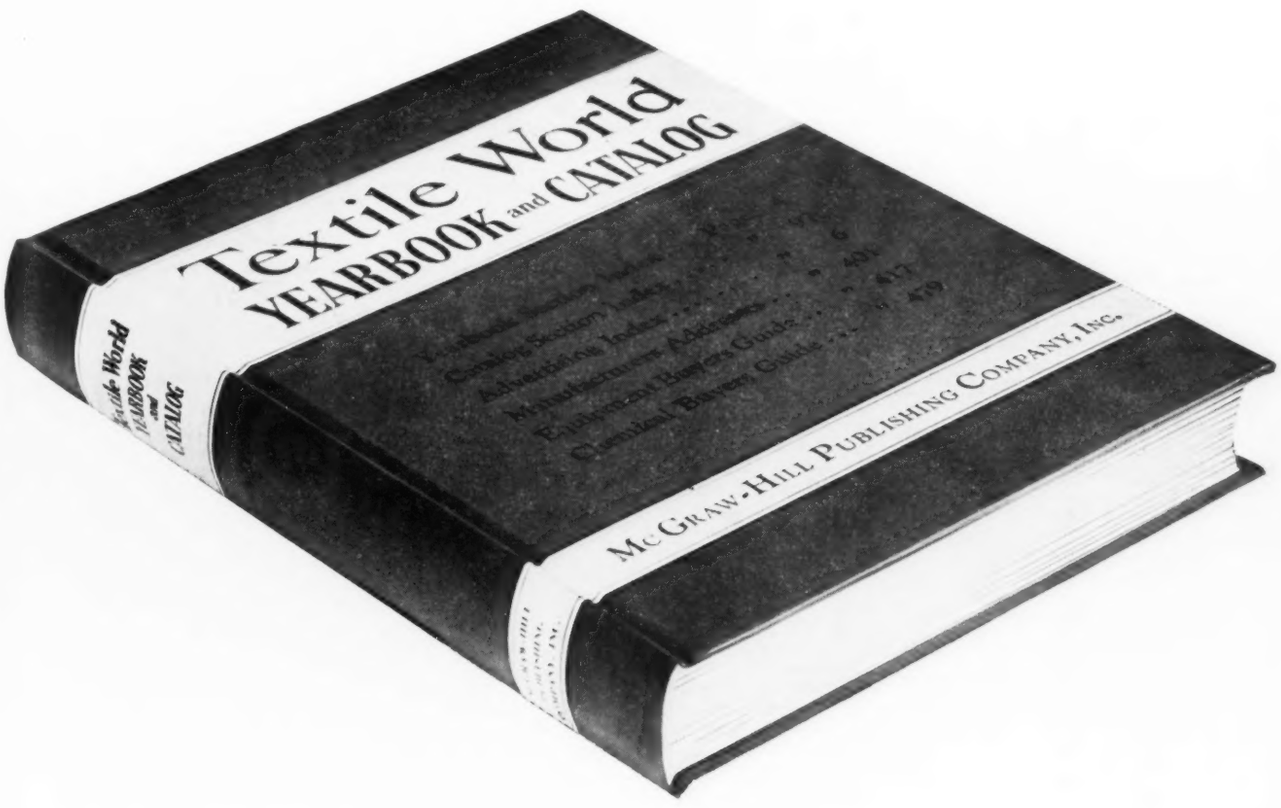

"The Yearbook with the Orange Band"

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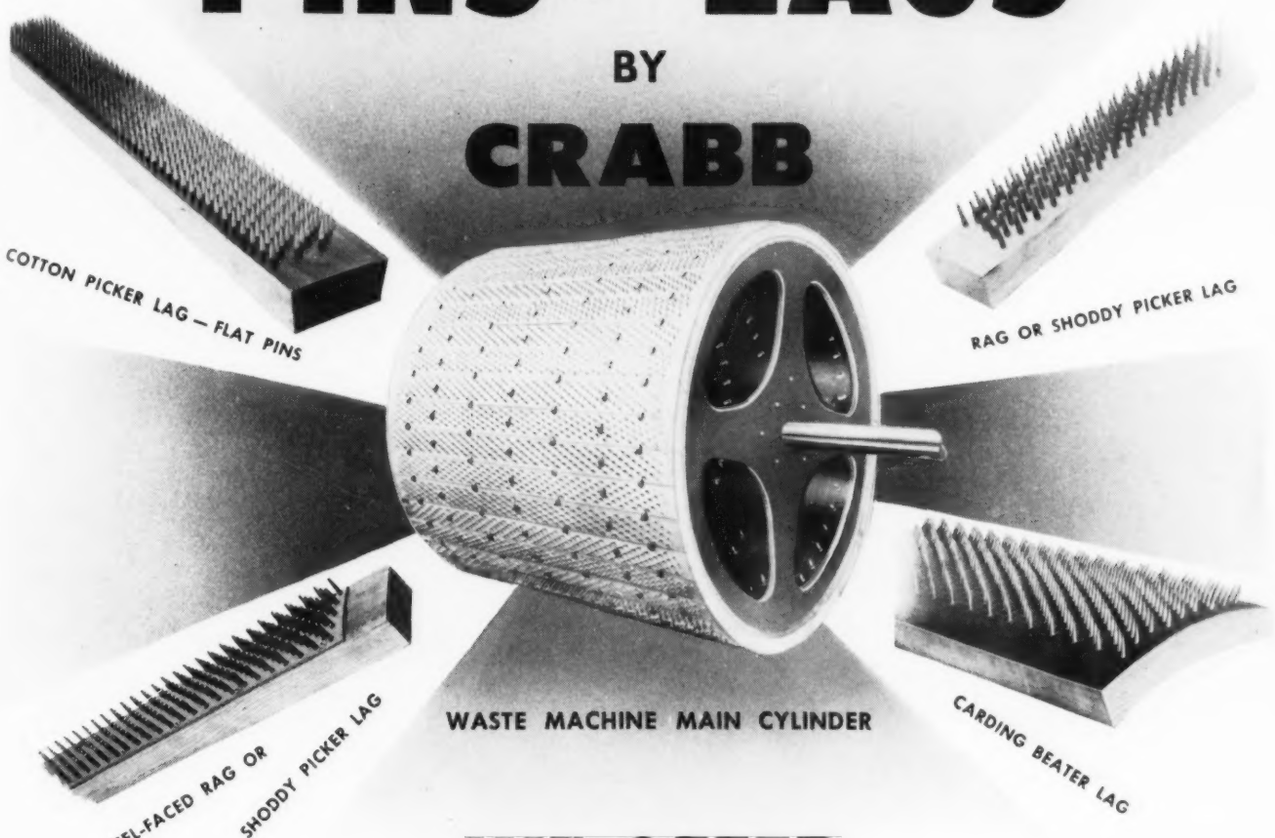
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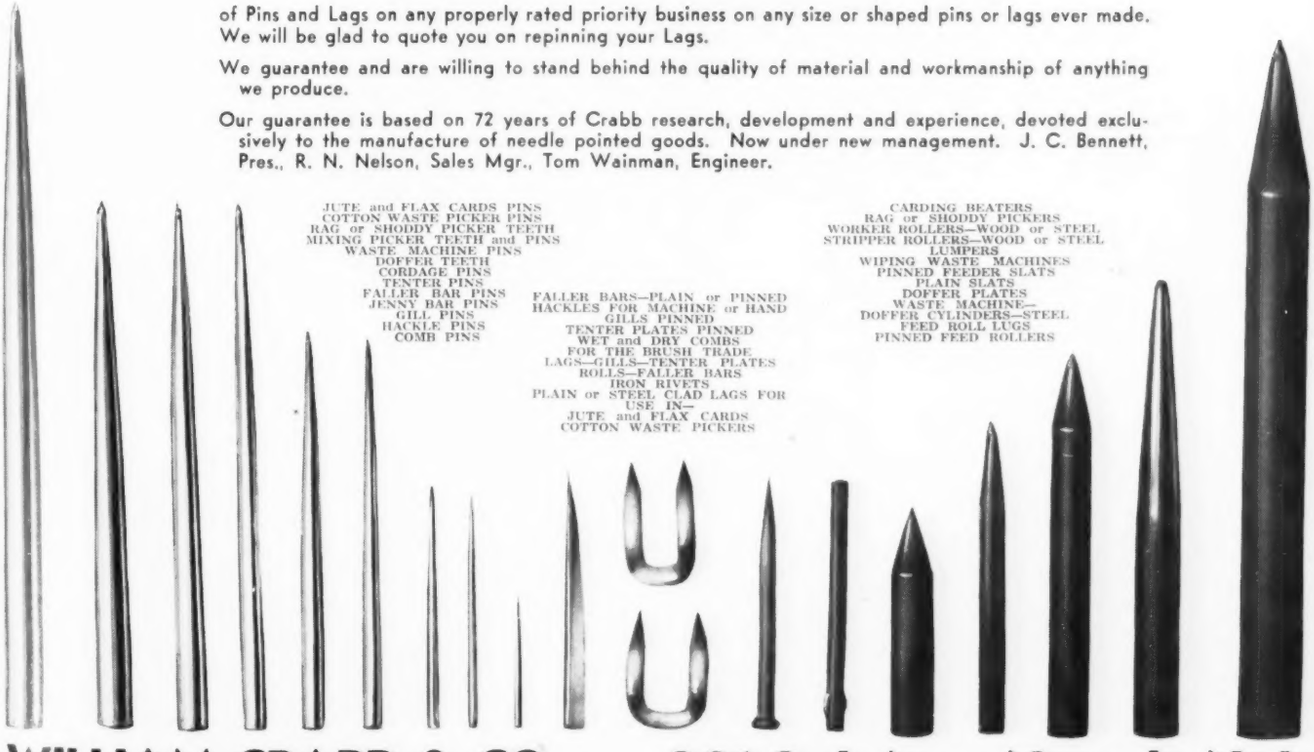

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